COAL AGE

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A Little Hard to Understand

BY R. DAWSON HALL

INTO the hands of many people, for the document is being widely circulated, will fall a leaflet entitled, "A Memorial by the National Shippers' Conference to the Joint Conference Committee of the Congress of the United States Having Under Consideration Pending Railroad Legislation." It is signed quite numerously by influential organizations, manufacturers and distributers and producers of raw materials.

Among the latter may be noted the American Mining Congress, the National Coal Association, the Illinois Coal Traffic Bureau, the Indiana Coal Trade Bureau, the Knox County Coal Operators Association and the Southern Indiana Coal Bureau. The names of mining organizations are specifically mentioned because this appeal is made to them, a coal paper being a natural vehicle for approaching such persons.

Let us first inquire what has been the general line of argument relative to metal prices put forward by the producers of mineral products especially copper, lead and zinc, tungsten and the precious metals. It has commonly been said that mining is a hazardous business, that money invested in a new proposition even when it looks good and is properly conducted by honest and capable persons, is quite likely to be a failure. The metal men point to the failures of many highly reputable ventures. They assert that the chances in an investment are so great that unless great profits are allowed to the successful ventures capital will refuse to enter the business and if it does enter will be lost because the losses which are unlimited would surmount and negative the profit which, under government regulation, would be strictly controlled.

Who shall deny that there is warrant for this belief but who also will deny the fact that there is no longer any element of gamble in the great mineral-producing properties? Could we not, for instance, put a price on copper that would pay 5½ or 6 per cent on the original capitalization just as surely as we can put a price on transportation that would net the same? With the variation in demand for copper, it cannot be done in the copper mines with a certainty of success, nor, with a variation in demand for transportation, can it be done in the railroad business.

There is no reason why a Cummins Bill should not be enacted for the mineral industry. We could readily forget that the risks of the mineral industry had already ruined many small and large aggregations of capital and had largely reduced the accumulations of others. We could say that all the successful ventures should be strictly regulated by some board so as to return only a reasonable profit on the original investment. We can well imagine, nevertheless, what complaint would be made by the mineral industry at this unquestionable injustice.

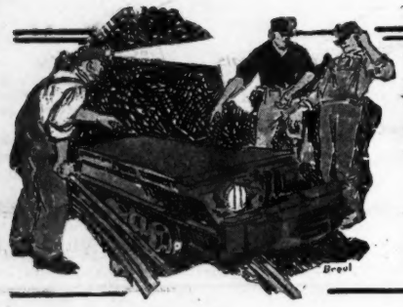
We could call for an Interstate Commerce Commission to keep profits down and bring all mines down to a "cost plus" basis with the plus somewhere around 5 or 6 per cent. It would be unjust of course, but it would resemble what the shippers, who signed this memorial, would like to apply to the railroads.

The shippers do not give the Cummins Bill their support, but what they object to is not the closeness and unfairness of the control but those elements in the control that mitigate and make bearable the unnatural restraint of the railroad industry, for when railroads were first built there were all the elements of uncertainty that beset mining ventures. Some mining plants pay almost from the first, the United Verde, for instance, but few if any railroads remain in the hands of those whose capital built them.

Having accepted the risks the railroads which win through at much peril and privation are asked to be content with a profit no larger than is paid on municipal bonds which are rated among the safest of investments.

A guarantee of such a return seems, to the National Shippers' Conference, unfair and socialistic, but surely to regulate the returns as the Interstate Commerce Commission has done is even more unfair and socialistic. The railroads found their difficulties so insuperable under that rule that only Government control made possible their continued operation, and only to the Government was the Commission willing to allow increased rates of any degree of adequacy.

Let us hope that the public will never be so blind and so injudicial as to use the mining public and the long list of shippers who venture boldly to put their name to this document in like manner to the way in which they would use the railroad industry. If some day the public treats the mining industry as it has used the railroads, no one will be justified in saying a word of defense.



IDEAS AND SUGGESTIONS

PRACTICAL SCHEMES THAT MAKE THE DAY'S WORK EASIER

Rack for Rolled Drawings*

BY M. C. ROSS
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WHILE an open-construction "rack for holding rolled drawings" may be satisfactory for certain applications, it has some disadvantages, which experience over a long term of years with different varieties of filing cases for drawings has disclosed.

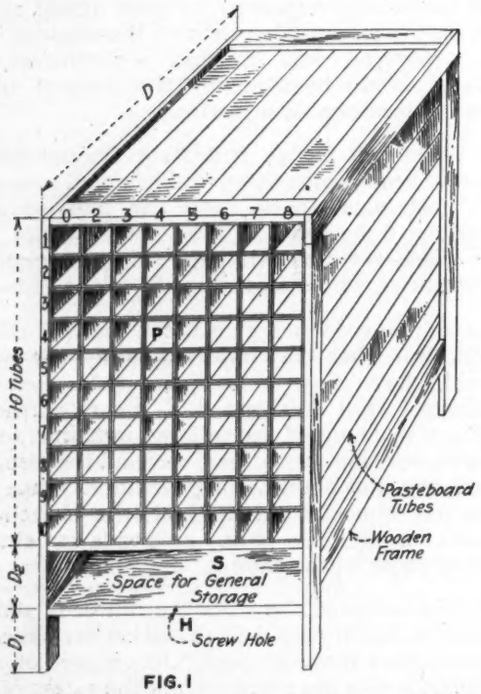

FIG. 1
GENERAL VIEW OF RACK, WHEN COMPLETED

The first disadvantage is that, with an open rack, the drawings are exposed to dirt and dust and will therefore, sooner or later, become permanently soiled. Furthermore, each time one of the rolled drawings is pulled from the rack, it must be dusted before a man can work over it, otherwise he will rub the dust into the sheet.

The second disadvantage is that short, rolled drawings, those that are not long enough to span the distance between two of the bents, will fall down between them and may thereby be out of place when they are required.

The third disadvantage is that, in pushing the rolls into the skeleton rack indicated, the end of the roll often strikes one of the vertical or horizontal supporting pieces, and this may make creases all along one of the edges of the rolled drawing. The drawings in such an arrangement may be protected from dirt by enclosing the rack in an oil cloth or wooden casing and by arranging a curtain to drop down over the front. But this expedient does not correct the other two disadvantages.

After trying out a number of different schemes for filing rolled drawings, I have found that a rack composed of tubes or pigeon holes (Figs. 1 and 2) is, by all odds, the most desirable arrangement. Therefore, how such racks may be constructed at low cost for temporary use, and for permanent installation in an office will be described.

For a cheap improvised rack the design detailed in Fig. 1 has been found well adapted. In this, each pigeon hole comprises a pasteboard tube. All of the pasteboard tubes are held in the frame, which may be quickly constructed of boxing stock. Pasteboard tubes such as those illustrated may be obtained at low cost and made to any reasonable dimensions required by the buyer, from any pasteboard box factory. Where it is the intention to use the rack only once in a given location and to ultimately discard it, the tubes may be provided with one pasteboard end and may be bound with paper.

But if the rack is to be assembled in one location and there used and then knocked down and moved to another location, both ends should be omitted from the tubes and they should be bound with a cheap binders' cloth at the ends as suggested in Figs. 3 and 4. When thus bound, providing "hinge" corners are used, the tubes, when

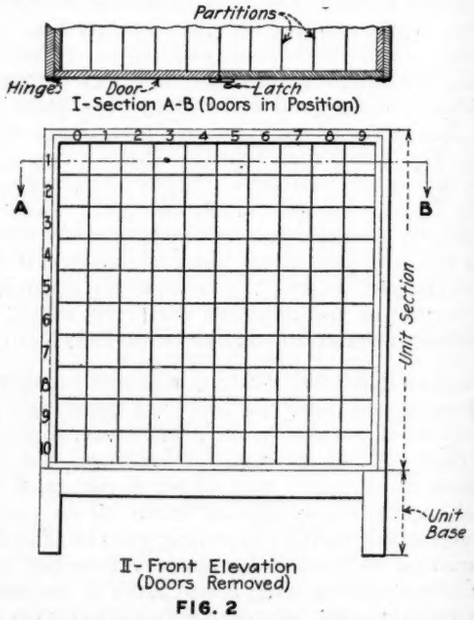

FIG. 2
DIAGRAM OF RACK FRONT

removed from the rack for transportation, can be compressed so that in shipping each one comprises little more than a flat sheet, as shown. The wooden frame holds the collapsible tubes so that their sections are square when they are mounted therein.

In order that the rolled drawings or tracings which are filed in the different pigeon holes of a rack like that of Fig. 1 may be located in a minimum of time, a systematic scheme of numbering the pigeon holes should be adopted. To this end it has been found that it is always desirable to make each stack of pigeon holes ten holes high. The stack may be any desirable number of pigeon holes wide. Where this "decimal" arrangement is adopted the numbers 1 to 10 should be marked along the left hand (Fig. 1) edge of the rack opposite the center of the horizontal row of pigeon holes to which that number corresponds (see Fig. 1).

Then along the top piece of the rack the vertical rows are numbered as detailed in the illustration, the number over the first vertical row being zero. Where this method is adopted it is easy to find pigeon hole No. 44, for example by reading the "abscissa" and the "ordinate" of the desired drawing and following with the eye to the pigeon hole where they intersect.

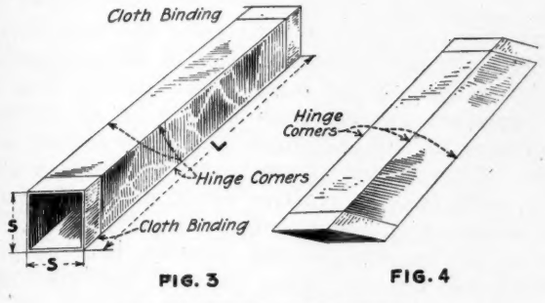

FIG. 3 FIG. 4

COLLAPSIBLE CONTAINER

In order that the pigeon holes will be sufficiently raised from the floor that it will not be necessary to stoop over too far to pull drawings out and to insure that sweeping will not drive too much dirt into the rack, a space (*S* Fig. 1) for general storage may be provided in the lower portion. If open end collapsable tubes are used, a piece of oilcloth or sheet of card board should be tacked over the rear end of the rack to prevent the entrance of dust. If tubes with one closed end are employed, that end, obviously, prevents the entrance of dirt from the rear. In any case, a curtain should be provided to cover the front. A window shade and roller answers admirably for thus inclosing the forward end of the case. A screw hook (*H* Fig 1) can be driven into the bottom cross piece to engage the ring in the shade stick to prevent the shade from raising when it should not.

As to the proportions of the pigeon holes these should preferably be square. Where the diameters of the rolled drawings to be filed are about the average, 6 x 6 in. pigeon holes are quite satisfactory. In certain infrequent instances where the diameters of the rolls are large, 8 x 8 in. pigeon holes may be desirable. Where the rolls are quite small, 4 x 4 in. containers may be utilized.

In Fig. 2 is suggested, in a general way, a desirable construction for a permanent pigeon hole case such as can be made by a carpenter. This design is based on the unit principle. The leg base is a separate member and may be removed. The pigeon hole section fits over it. Each one of these unit sections should always be 10 pigeon holes deep but may be 4, 5 or 10 or more pigeon holes wide as occasion demands. The section *A-B* (Fig. 2) shows how the doors should close against a rabbet to prevent, insofar as possible, the entrance of dust. The rear end should be closed with tongued-and-grooved boards or by panels.

In a permanent filing case, the pigeon-hole construction may be of any one of a number of different types, two of which are detailed in Fig. 5. With that designated as *I*, the vertical members are composed of soft wood boards about ⅞ in. thick. Into these saw-slots to accommodate the tinned sheet metal shelves are cut. An all-metal pigeon-hole construction can be arranged (Fig. 5, II and III). Such construction has, of course, the advantages of non-combustibility and space economy. The vertical members comprise sheets of tinned iron from which lips are bent out to support the strips which constitute the horizontal shelves. This metal construction, when mounted within a suitable wooden or metallic casing, is quite rigid.

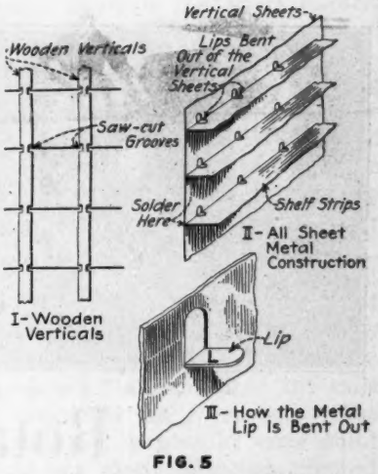

FIG. 5

DETAIL OF STEEL CONSTRUCTION

Gripping Devices for Ropes

According to the invention recently patented in England says the *Colliery Guardian*, a pin or the like is inserted through the rope at the place to be connected, to restrain the part of the rope at this place by a junction member so shaped that the portion of the rope displaced outwards by the pin engages in a recess of a wedge or double-wedged shape, in the junction member, whereby should either one or both such portions of the rope slip, these portions become more firmly held by being forced into a narrow part of the wedged recesses, as the rope in the forward movement tends to unstrand.

Efficient Wire Shear

BY CHARLES H. WILLEY
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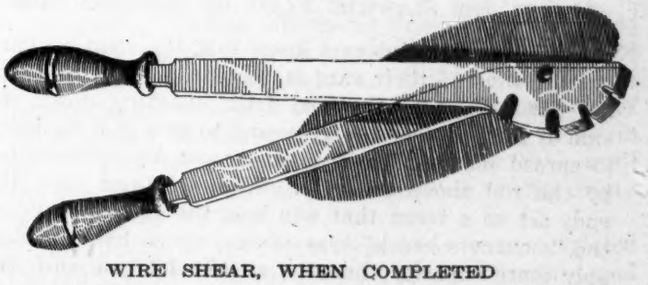
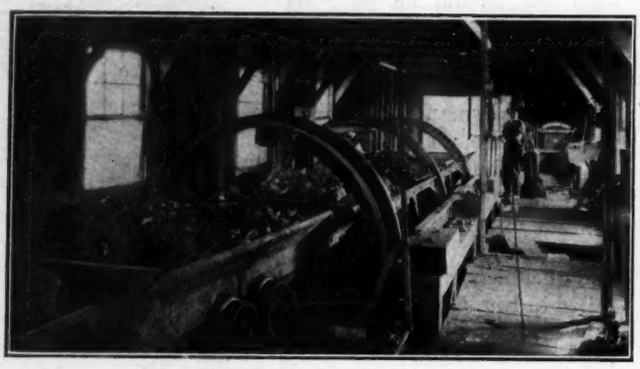
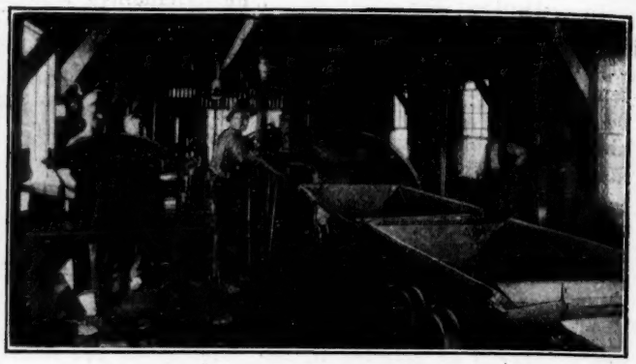
With two old flat files in a little spare time the mine-shop mechanic can make a practical and efficient wire-cutting tool as shown in the accompanying illustration.



WIRE SHEAR, WHEN COMPLETED

The files are each annealed and forged to the shapes indicated. A hole is drilled as shown in each part. The two parts are then bolted together and the slots for the various sizes of wire are filed in each jaw. The bolt is then removed and each part is tempered. A rivet is used in place of the bolt when the tool is assembled for use.





Rotary Mine-Car Dumpers

By Sheldon Smillie
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SYNOPSIS—*The rotary dump for discharging the contents of mine cars has many advantages over other devices employed for the same purpose. Such a dump permits the use of a "solid," that is a gateless door, allows any number of cars to be emptied at once and requires much less labor in operation than do other types of car dischargers.*

RECENTLY, in talking to the superintendent of one of the large coal companies, about rotary mine-car dumps, he remarked: "Fourteen years ago I would have gone down on my knees to the man who would make a dump for cars without end gates." He can now readily obtain such a device.

End gates in cars have been one of the big sources of trouble to mine operators, not to mention that nightmare the bottom-dump car. Little improvement seemed possible and managers have endured them as a necessary evil, many burying the cost of repairs in miscellaneous charges. One operator, realizing he had a number of men constantly at work on his cars, kept an account for one year and found that each gate cost him $5 per annum to keep in repair. This was exclusive of the other repairs the car had to undergo because of its being weakened through having but one solid end.

Use of the Slanting Flare on Sides of Cars

Few users of mine cars know that the slanting flare on the sides of their cars is for the purpose of keeping the weight of the coal from crushing down the side of the car near the gate, and to give it a tendency to spread instead, which tendency can be counteracted by the rod above the gate. With solid-end cars, the ends act as a beam that will hold the square shape of the "mourners bench" type of car, which has considerably more capacity than the standard types, with the same over-all dimensions. It is also possible to build these cars with greater width for a given gage of track than the other style, although this is not always advisable.

The leaky car is one of the most potent factors in creating a dusty and consequently explosive condition in a mine. Coal falling from the tops of cars is usually in lump form and rolls to the rib without much breakage, but the coal from the leaky or carelessly-closed gate falls directly on or between the rails, and is ground by the many wheels passing over it to an impalpable powder which floats in the air and settles everywhere. In a wet mine, this dust gathers at the sides of the rail and draws water by capillary attraction, reducing the tractive effort of the locomotive. To overcome it, the motorman sands the rail. This serves its purpose for the moment, but the ground sand joins the dirt along the rail and does its bit toward making matters worse.

Use of Modern Dumps Greatly Increased

Readers of *Coal Age* well know that from time to time, there have appeared descriptions of installations of rotary dumps. Some operators have attempted to utilize devices of this kind, but few realize that the use of these dumps is becoming general practice and that a rapidly increasing number are being installed every year. One large steel company is putting in devices of this kind to the exclusion of all others for discharging coal cars. Many of the earlier installations were cumbersome, expensive and broke the coal because of their large diameters. As there were formerly no specialists making these machines in quantity, some parts were of weak design, while others were unnecessarily heavy. Modern dumps are of careful design, nicely balanced on roller bearings, and various simple devices are employed to prevent the coal from leaving the dump until the car is completely overturned.

Dumps Can Be Made with Varied Length

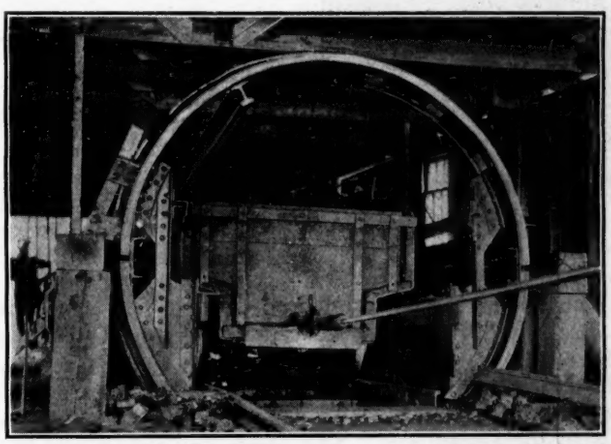
These dumps are usually built as a cylindrical skeleton not much larger than a car, but they may be made long enough to contain any number of mine cars desirable to discharge at one time. The H. C. Frick Coke Co. has one dump long enough for 18 cars at its Lamont No. 2 mine near Uniontown, Pa. Five- and six-car dumps are quite common, and one to take 28 cars is under construction.

There are several devices for holding the cars in the dumps, one consists of horns which close over the wheels like those of self-dumping cages, but the simplest appliance for this purpose is an angle in such a position that the wheels of the car run under it. Cars equipped with brakes offer an obstacle to this, but where new cars are to be purchased, they can be designed with brakes working upward instead of down-

ward. This is really the logical direction in which a brake should operate. When brakes which interfere with this method of holding the car are employed, an angle or tee may be riveted along the side of the car. This is tapered off at the ends to prevent catching in clothing and serves the double purpose of a ledge whereby the car may be held on the dump, and a stiffener.

Some operators object to this angle, and where such is the case, a simple inexpensive alteration in the brake can be made, which will permit it to clear the holding-down angle of the dump.

The old-style dump was usually arranged to operate by gravity, but this has been found unsatisfactory for large capacities and a positive drive of some kind has been generally substituted. A cheap dump for small capacities, however, has been successfully developed by employing a simple device which prevents the load from losing its effective weight until the last moment.



SHOWING SLOPE MINE HOISTING IN BALANCE
Note two ropes—Slack rope on trip at bottom

The best and most reliable dumps are driven by means of air or steam working in a long cylinder connected to the circumference of the dump frame by means of ropes. This type of machine is extremely rugged and reliable. It has but few moving parts to get out of order, and there is nothing that can happen to it to prevent it even when partially disabled from completing any given shift when full repairs can be made. There are no gears or clutches to get out of order or break, and the cushion of air or steam is well adapted to starting a heavy load smoothly without strain. All the large dumps are operated in this manner, as well as those where conditions require an "over and back" motion. It is the type best adapted to shaft-bottom installations, where conditions are unsuitable for motors. The air necessary for their operation can also be made to actuate the skip-loading gates, and pneumatic-car hauls. These latter are greatly superior to the chain haul, as no pits are required. The pneumatic-car haul has few wearing parts, and the device hesitates a moment after striking the lug or axle while sufficient pressure gathers behind the piston to move the car forward with a gradual acceleration. The tendency of the chain haul is to jar the car into motion equal to the constant speed of the chain. This overloads the motor and is the cause of frequent armature burnouts. Pneumatic-car hauls are now made to be double acting and employ the air or steam expansively, so that they economize power.

Where air or steam is not available, a small electric air-brake type of compressor may be located near the dump. There is thus little transmission loss, and the motor is stopped when there is plenty of air in the receiver. The receiver acts as a storage and gives out sufficient power to do the work without imposing peak loads on the motor. Large dumps, operated intermittantly, can be actuated by quite small motors that build up the air supply between dumpings.

Another class of rotary dump is the direct electric driven. These are designed for high-speed, sustained operation, where there are no long intervals of idleness. The earlier types were driven by motor, working through suitable gear reductions to a main gear encircling the dump. This type is slow turning and requires a hand on the controller all the time that the dump is in motion. It needs care and practice to stop the dump with the rails in alignment, and the power requirements in starting are high.

More recent designs have a revolving shaft that moves constantly. These dumps require a clutch of some kind to throw them into and out of action. They are generally equipped with some sort of braking device and a stop which insures exact alignment of the rails when the dump has completed its revolution. The brakes formerly were generally located at some point under the dump, and if not nicely adjusted, stopped the machine too soon, or else allowed it to bang with considerable force against the top. Continual adjustment was needed, and it was difficult to get at the braking device so as to alter its setting.

The latest type of dump employs the same variety of shaft drive, but the adjustments are all brought back to the operating lever. Here a quick alteration of the limit of travel controls the breaking effect and makes adjustment convenient. The stops are regulated by a spring cushion upon which they float, and which absorbs all unnecessary jar. With these dumps, all the operator has to do is push a lever forward and the dump starts turning, the lever drops back and the dump stops itself automatically.

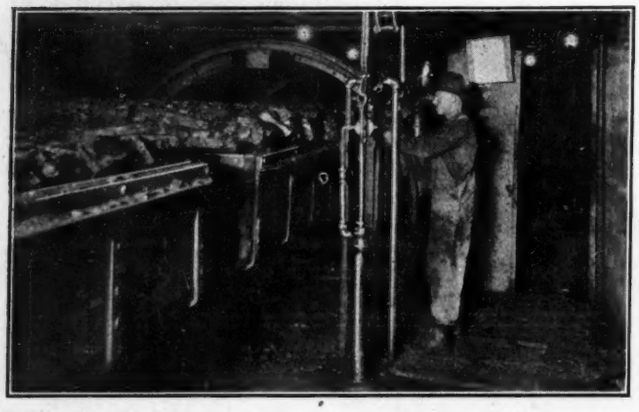
The third class of rotary dumps include the gravity types referred to before. They are intended for use where a light dump of small capacity will do the required work. They are naturally much cheaper, require no power and will accomplish the same general results, as the more expensive types. They are good for production up to 750 tons in eight hours, and for discharging rock cars at some point remote from the main dump.

Control of the cars within the dump is accomplished usually by means of horns so set as to accurately spot the cars in the proper position. These open and close automatically with each revolution. A similar pair of horns placed at the entrance of the dump work in unison with them, holding the loaded car back until the dump has reached the proper position for the empty to proceed on its way.

Most dumps of the rotary type have merely replaced the old crossover dump, the cars being uncoupled and after discharge being either pulled back out of the dump or proceeding to a kick back beyond. It has been found, however, that by so arranging the layout, that the empties pass to storage tracks beyond the dump, and that by equipping the cars with swivel links (in size and shape the same as ordinary links) that one man can take the cars from the loaded track

pass them through the dump, and deliver them to the empty track without uncoupling. This is a distinct saving, obviating the services of several men. As the cars do not travel singly, there is no violent bumping in their passage either in or out of the dump, and it is unnecessary to use brakes or sprags. By increasing the number of cars discharged at a time, one man is capable of handling an enormous tonnage.

Weighing can be done on track scales so spaced that one car is standing on them while one is dumping.



ROTARY DUMP (600 TON) AT UNION COLLIERY CO., DU QUOIN, ILL.

For this arrangement horns should be properly spaced to allow the coupling to be slack and the car being weighed to be free of the others. However, operators are more and more turning to the weigh-basket under the dump as a means of getting away from the variable tare of the car and troubles with the Union.

I don't know who first adapted skip hoisting from metal mines to coal mines, but its advantages have only recently been realized. A good many years ago, Clarence R. Claghorn installed rotary dumps in the bottom of the Wehrum No. 3 shaft of the Lackawanna Coal Co. to be used in connection with hoisting in skips. Unfortunately, however, for some reason not connected with the equipment, it was never put in service.

Probably the first successful use of the skip was in the Ziegler mine of Bell & Zollar in Illinois. Bottom-discharge cars dropped the coal into a pocket which fed to skips through gates some distance below the coal bed. These cars proved so troublesome on account of leakage and accidental opening, that a rotary dump was installed over the pocket and the equipment which has been now in service for some time, is giving excellent satisfaction.

Another pioneer in the use of skips is the Maryland Coal Co. The St. Michaels Shaft near South Fork, Pa., was originally equipped with triple deck cages, but these were abandoned in favor of an inside dump and skip hoisting.

Skip hoisting has now been adopted by many of the large operators in laying out their new mines. Two of the most up-to-date shaft mines in Illinois, planning to hoist upwards of 5,000 tons per day, are being equipped with rotary dumps in connection with skips. Several similar installations are under construction in western Pennsylvania and projected in the anthracite field.

One of the chief advantages to be obtained by the use of skips, is a decrease in power consumption for hoisting. This may be as much as one-third where two car loads are hoisted in one skip. It arises from the decreased speed and dead weight to be accelerated, which power is lost in breaking. Another large advantage is that an engine smaller by about two-thirds is necessary since the peak load required for rapid acceleration is reduced by the square root of the velocity and the hoisting operation is spread over the period formerly required for the caging of the extra car, since a skip can be completely filled with two cars of coal in the time required for caging one car.

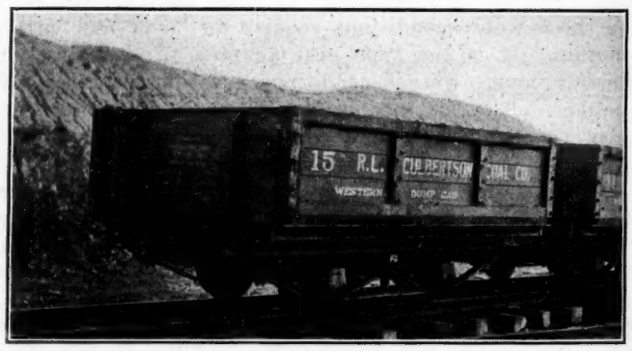
The reduction of peak loads are of particular importance where the hoisting is done electrically, and the power purchased. The motor in this case costs considerably less while peak loads increase the cost per kilowatt hour.

Breakage of coal only occurs while filling the first foot at the bottom of the skip, and even this may be reduced by special forms of rounded bottom, which are only struck a glancing blow. This breakage is not nearly as great as that on the coal projected from rapidly dumped cages which throw the lumps over the gate and down the chute or into the weigh-basket.

At mines using self-dumping cages and putting out a large tonnage, it is as much as a man's life is worth to stand around or under the dumps. Self-dumping cages also require an attendant at the top, and time is lost in extra signalling required from this point. Skips require three times the height of hoist to dump in, that cages require, giving the engineer better control of the hoist. The coal pours out smoothly like sugar out of a scoop and requires no attendant at the top.

Rotary dumps are also well adapted to slopes and inclines. By running a rope through the dump, any number of cars may be hauled up a slope to the top of a tipple or breaker, and turned over either all at once, or one or two at a time, without disconnecting from the rope. All this may be done by one man who can act as hoisting engineer and dumper combined.

In the coke regions, the long dump has been arranged for discharging the entire trip over the long bins, pecu-



SHOWING IMPROVEMENTS IN CONTRACTORS' CARS BY REMOVING PEDESTAL AT AN OHIO STRIP MINE

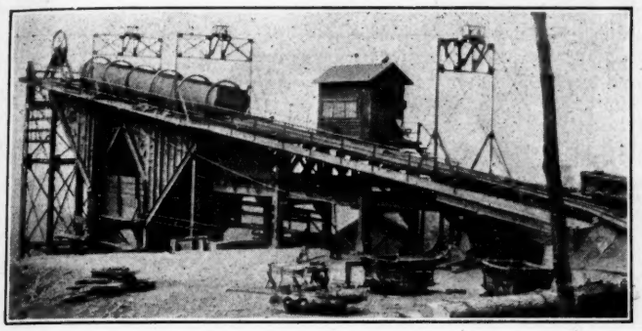
liar to that district, and from which the charging larries draw their loads by passing in rotation to numerous gates in the bottom.

The H. C. Frick Coke Co., as previously stated, has one dump accommodating 18 cars at its Lemont No. 2 mine. Another built for six cars is installed at Beatty, Pa., while another for 28 cars is under construction. It is also possible to hoist trips in balance with two ropes running through the dump. Such a plant is in operation at the mine of the A. J. Morgan Coal Co., Pipe Creek, Ohio.

In the anthracite field, the George F. Lee Coal Co. has a rotary dump at its Plymouth breaker. Cars are hauled up a slope and dumped in the top of the breaker, making an intermediate handling of the coal unnecessary, and reducing the number of men previously required.

Inclines are merely the reverse of slopes. Cars are here lowered down the incline, into the dump, and discharged without disconnecting from the rope.

These arrangements make in addition to the savings secured by solid cars a considerable reduction in the cost of a tipple, as such a structure need only be one track wide instead of the two tracks required for the crossover dump. Furthermore the slow uncoupling and



FIVE-CAR SLOPE AND DUMP USED IN ALABAMA

tramming of single cars to the dump is eliminated with a saving of several men, and much time. This latter is important when the haul is long, and the dumping time must be short in order to secure the desired capacity.

Speed in dumping frequently eliminates an entire trip of cars, since the same cars can be returned to the mine without having a standing empty trip waiting for the locomotive.

The largest tipple in the world, that of the United States Coal & Coke Co. at Lynch, Ky., is being equipped with rotary dumps.

A new field which the rotary dump has recently entered, is in connection with coal stripping. The R. L. Culbertson Coal Co. near Cadiz, Ohio, has a dumper for discharging the coal from the cars into which it has been loaded by the shovel. Where coal is not loaded directly into railroad cars, but is picked, screened, or otherwise prepared for market, the usual practice has been to load it into contractors cars for hauling to the tipple. These cars are high, do not ride the track well, and require considerable time and the labor of several men to dump.

By discharging them in a rotary car dumper, the car can be lowered by taking out the high center pedestal, and bolting the box firmly to the trucks. The cars will then ride the track better, withstand the severe usage under the shovel, since they have no side doors, and only one man is required to turn them over at a rate considerably faster than could be attained by the old method. This permits of the more rapid movement of trains, and consequently fewer cars are required. Everyone who has seen the Culbertson car, remarks on its graceful lines, if such can be said to exist in any coal car.

O. B. U. Still Strong in Canada

THE One Big Union does not appear to be dead among the coal miners of eastern British Columbia and the Province of Alberta. Recently the O. B. U. forces of Alberta met at Calgary and forwarded a resolution to the Minister of Labor, Ottawa, saying that they were willing to accept the 14 per cent increase in wages awarded them, pending further negotiations on which they are insistent, and absolutely opposing the order of the Fuel Commissioner that the United Mine Workers of America shall be the workers' organization to receive recognition. It is hoped that this resolution will meet with the approval of the Minister of Labor and immediate action soon taken.

On Jan. 14 the mine workers at Coal Creek, Crow's Nest Pass Coal Co., refused to enter the mines because the President of the Fernie local of the One Big Union was ordered off the miners' train for refusing to pay his fare. They were idle for a day and no further information is available as to further developments. As to the situation in the Province of Alberta a letter written by one of the O. B. U. officials on Jan. 8 is interesting. He states that at the Western Gem, Monarch, and Brulé Mines the operators have withdrawn the check-off. He also asserts that everywhere the O. B. U. is making headway against the forces of the United Mine Workers of America. How far this statement may be accepted cannot be said, but there can be no doubt that the miners are divided in their union affiliations, and that counter propagandists are energetically at work. Meanwhile, the mines are on a productive basis with the assurance that there will be plenty of coal available for the imperative needs of the winter.

Fatalities in Ohio in 1919

BY JEROME WATSON
Chief Deputy and Safety Commissioner of Mines, Columbus, Ohio

IN ALL, there were 141 fatalities during the year. Of this number, 77, or 55 per cent were caused by falls of roof. This compares favorably with 1918 when 91 deaths, or 62 per cent of the entire number, were attributable to this cause. There were 13 deaths caused by mine cars; 9 by explosives; 5 by motors; 3 by electricity, 3 by mining machines, 2 by railroad cars, 2 by gas explosion, 6 by miscellaneous causes; 1 by a shot blowing through the rib and 20 by mine fire. Belmont County showed a marked improvement, reporting 30 fatal accidents as compared with 43 in 1918. Jefferson County showed an increase of 14, reporting in all 36. All of the additional larger coal-producing counties showed decreases in the number of fatal accidents.

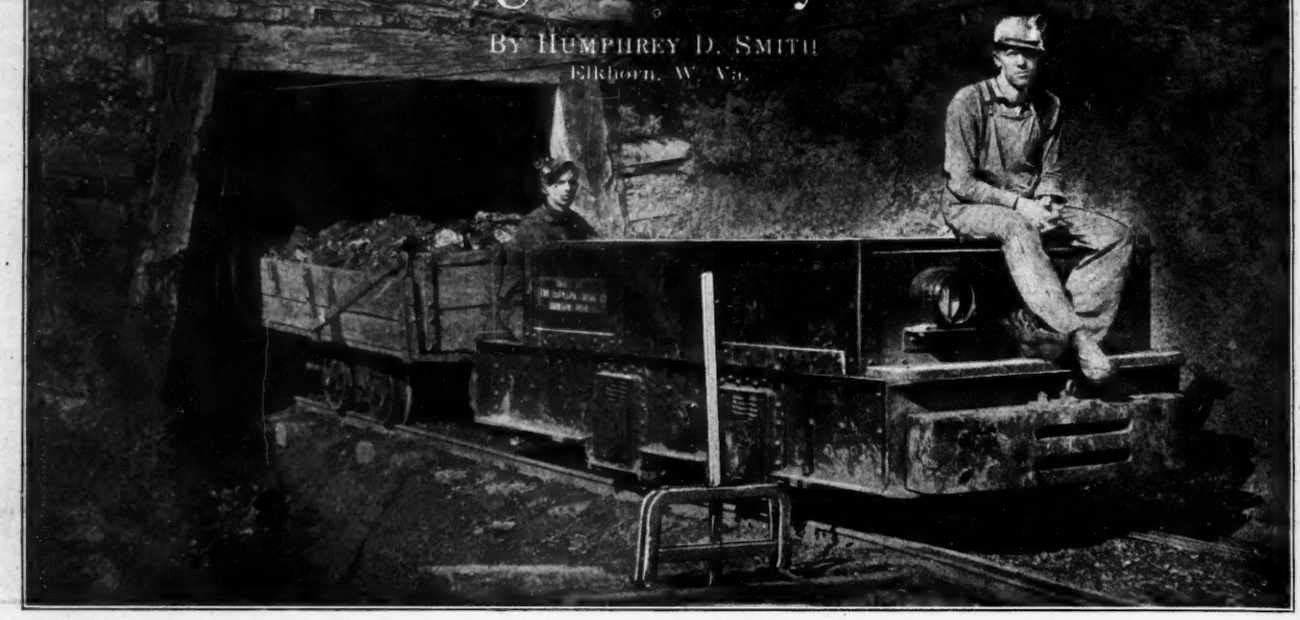
In addition to the Amsterdam mine fire, there were numerous smaller mine fires with which to contend. Five such fires started during the year—all in small mines. None of these, however, jeopardized the lives of miners. Some of these mines it was necessary to entirely seal up, and as yet they have not been reopened.

On March 26, 1919, the General Assembly of Ohio enacted a law requiring every owner, operator, lessee or agent of a coal mine, where five or more persons are employed, to provide and keep in repair a wash room, convenient to the principal mine entrance adequate for the accommodation of the employees, for the purpose of washing their persons and changing their clothes when entering and returning from the mine. Such a wash room must be properly lighted and heated.

It is hoped that the operators in Ohio will follow the law as closely as possible.

Care of Storage-Battery Locomotives

By Humphrey D. Smith
Elkhorn, W. Va.



Paper read before West Virginia Mining Institute, Huntington, W. Va., Dec. 1919. Mr. Smith is assistant manager of the Crozer Coal & Coke Co. and Upland Coal & Coke Co., Elkhorn, W. Va.

THE wide differences that exist in local conditions at the various plants of West Virginia cause a different treatment to be put in force in one mine from that used in another in regard to storage-battery locomotives. The subject has already been discussed at more or less length, but we shall be satisfied in giving it further attention, for many of these machines have since been purchased and put into operation throughout the country, and such progress has been made that I now believe they have passed the experimental stage.

The fundamental principle in charging the storage battery is to pass through the cell in a direction opposite to that of discharge an amount of current equivalent in ampere-hours to that taken out on discharge, plus a certain excess to make up for losses.

Excessive Charging Rate Causes Gassing

With the lead-acid battery, if the charging rate in amperes is kept below a certain value, practically all the current is useful in restoring the active materials to their normal-charge state. If the charging rate is increased, a point will be reached where the oxygen and hydrogen formed at the surface of the plates by the decomposition of the water of the electrolyte will produce what is technically known as "gassing," the rate of gassing increasing with every increase in the charging rate. The decomposition absorbs an amount of current proportionate to the amount of gas produced, and this current is wasted, that is, it produces no useful effect in charging. High-charging rates that produce violent gassing mean not only a waste of electric energy, but tend to dislodge active materials, producing an excessive rise in temperature, thereby shortening materially the life of the plates.

In general it is permissible to charge a lead battery at any rate which does not produce excessive gassing or a cell temperature exceeding 110 deg. F.

The charging rate at which appreciable gassing begins depends on several factors, such as the state of the charge, the temperature, specific gravity of electrolyte, type of plate, etc., the principal factor being the state of the charge.

Slacken Up As You Near the Goal

Any charged battery will produce gassing, and when a battery is nearly charged the rate may be reduced. In this way the amount of gas formed will be immensely reduced. This safe rate is what is known as the finishing rate, and a rough rule for determining its value is to add one to the total number of plates in the cell and regard the number so obtained as the number of amperes required. Thus in the case of a 19-plate battery the finishing rate would bé 19 plus 1, or 20 amperes, a simple computation.

Don't Gain Time By Crowding Battery Feed

When a battery is partly discharged, the charging rate may be several times the rate allowed for finishing, and it will not produce violent gassing. The more completely the battery has been discharged, the higher the charging rate may be made without causing the battery to gas excessively. It is found that if the rate throughout the charge period is constantly adjusted to a value equal in amperes to the number of ampere-hours of the battery at each particular instant, violent gassing and excessive rise of temperature will be avoided. Any rate of charge not exceeding the ampere-hour capacity at any given instant will be satisfactory, so far as the battery itself is concerned. However, it is not necessary to reduce the rate below the finishing rate. If in conforming to these rules the charge is maintained at the highest possible rate, the charge can be completed in the shortest possible time, whereas if the rate is increased above the gassing point, the charging of the battery is not appreciably hastened.

It is found that the constant diminution of the charging current throughout the charge in accordance with the rules specified above results in the voltage across the battery terminals remaining substantially constant, therefore if a constant voltage is applied and maintained at the battery terminals throughout the charge a diminishing current will result.

Under suitable conditions this voltage will be 2.3 volts per cell. It may however vary between 2.15 and 2.4 volts per cell, depending on the age of the battery, the condition of the electrolyte, the temperature, etc. This method of charging is what is known as the "constant-potential method" and in a given time returns a maximum amount of energy to the battery. However, its practical application has objections for the following principal reasons:

Some Objections to the Constant Potential Method

(1) The initial current peak is so great as to require the capacity of the charging equipment to be considerably in excess of the average load. (2) Toward the completion of the charge it is usually desirable to maintain the current at the finishing rate by increasing the voltage. (3) Variations of cell temperature, specific gravity of electrolyte or slight fluctuations of bus voltage produce undesirable variations in the charging current.

The "constant-potential" method has its disadvantages because of the initial peak, because toward the close of the charge the voltage must be increased, and because the potential that is desirable varies with the temperature and the gravity of the electrolyte. If the voltage is not constant, as desired with this method, the charging may be unprofitably slow. In cold weather a higher voltage must be used.

These objections can be overcome by maintaining a slightly higher but constant voltage on the bus and inserting a fixed resistance in the charging circuit of the battery or of each battery if more than one is involved. This procedure is known as the "modified constant-potential" method, and is recommended by the battery manufacturers wherever conditions permit its adoption. For the constant voltage bus, a value equivalent to 2.6 per cell will be found generally satisfactory, although during the summer months a slightly lower voltage may be desirable in order to avoid excess of temperature and during the winter months a slightly higher voltage if the time available for charging is limited.

If the bus voltage cannot be altered, the resistance in the charging circuit may be increased in summer, and reduced in winter, to accomplish the desired results. In order to secure equalization of the charge in cold weather, means should be provided for increasing the bus voltage to 2.65 volts per cell. As a general rule the equalizing charge is taken to be one-half the finishing rate.

Self-Disconnecting Battery Unsatisfactory

In regard to the automatic termination of a battery charge, attempts have been made to devise apparatus which will disconnect the battery from the power supply circuit upon the completion of the charge. In a great many cases these devices have depended upon battery voltage or upon charging current for the functioning of the automatic cut-out. However, neither of these methods have proved satisfactory because of the wide range of the final voltage that a fully charged battery with varying conditions of temperature, aging of plates, specific gravity of electrolyte, etc., may carry. Likewise the final current with a fixed charging voltage varies widely and cannot be depended upon for the proper functioning of an automatic cutout.

The ampere-hour meter used in conjunction with a shunt-trip circuit breaker or a low-voltage release mechanism has proved to be the only reliable means of automatically terminating the charge of the battery upon its completion. The ampere-hour meter must be connected in the battery circuit at all times so as to register the state of charge of the battery.

In order to provide the proper overcharge the meter is arranged to run slower on charge than on discharge. In the case of the Edison battery this instrument is so set as to provide from 20 to 25 per cent overcharge, and in the case of the lead-acid types of batteries, from 10 to 15 per cent overcharge. With the proper setting an ampere-hour meter so arranged as to disconnect the battery when the meter hand returns to zero on the dial will give satisfactory results, and is to be recommended wherever practicable. In using a fixed resistance in series with the battery to bring the power supply voltage down to that required by the battery there is a considerable loss in power, this being on 250-volt circuits an amount equal to the charge, and with 500-volt supply circuits an amount approximately equal to three times the charge. This loss in itself is enough to warrant using a motor-generator set for charging purposes.

The question is frequently asked whether it is possible to charge two or more sets of batteries in series from a given source of power using a fixed resistance, or a variable resistance in series with the batteries. If all the batteries are in the same state of charge this means of charging may be employed. However, if they are not in approximately the same state of charge, means must be provided for cutting out any battery that becomes fully charged in advance of the others, and substituting for the battery cut out a resistance which will produce a voltage-drop equivalent to the voltage in the battery disconnected. The charging of a number of sets of batteries in series entails careful attendance, and as a general rule I do not care to recommend such a procedure, as it is my opinion that improper charging will be inevitable.

Capacity to be Measured in Kilowatt-Hours

In regard to the capacities of accumulators, many people interested in storage-battery locomotives think of the battery capacity strictly in terms of ampere-hours. This is erroneous, as work cannot be measured in terms of ampere-hours, but must be measured in terms of kilowatt-hours. One cell of a given battery has as great an ampere-hour capacity as 100 or more cells of the same particular size, so that defining a battery in ampere-hours capacity does not definitely fix the capacity of the accumulator, unless the number of cells or the voltage of the battery is specified.

With the Edison battery the importance of charging correctly is probably not so great as with batteries of

the lead-acid type, inasmuch as no harm will be done to the cells in charging if the temperature of the electrolyte is kept below 115 deg. F. In the case of the lead-acid type, excessive gassing might occur with a temperature of electrolyte below the allowable limit of 110 deg. F. Such gassing particularly in the plain-plate battery would result in the shedding of active materials, especially if the gassing should be very violent.

I understand that in some cases the Edison battery seems to become discharged very quickly in service, although according to record the battery has been given a complete charge previous to such discharge. This sluggishness is most frequently encountered in the case of a battery that is not discharged to complete exhaustion during each day's operation. It is observed that toward the end of the day's work after a given period of operation the battery gets sluggish. In such a case the battery should be discharged to complete exhaustion and then given an overcharge upon completion of the regular charge at the normal rate. In some cases this method of charging does not bring the battery back to normal condition, so that it is often quite helpful to reverse the cells of the battery after short-circuiting at the completion of the discharge, and then charge the battery for approximately a 12-hour period at the normal charging rate.

In order to prevent excessive gassing do not let temperature rise too high or let the input of electric energy be too rapid. However, with the Edison battery the charging rate should not be too slow as it will reduce the speed of the locomotive on the discharge that follows. Author describes care to be taken by the crew and by the watchman when stabling and removing the locomotive.

The sluggish condition is apparently the result of the use of a sodium hydrate instead of a potassium-hydrate solution, as the former seems to have a slightly higher internal resistance than the latter. I have not received any information from the Edison Storage Battery Co. that this is the case, but from some reports that have reached me, apparently the substitution of the sodium hydrate for the potassium-hydrate solution, because of the scarcity of potash during the war period, is responsible for the sluggish operation of the Edison accumulator toward the completion of the discharge.

Times may arise when it is desirable to double-shift a locomotive and obtain a part charge in a short time. This may be done by giving a boosting charge at rates of from two to five times normal discharge rate for short periods, but care must be exercised to see that violent gassing does not occur and that the temperature does not rise above 110 deg. F., according to the type of battery used.

Do Not Use Excessively Slow Charging Rate

In charging the Edison battery either the constant-potential or constant-current methods can be employed. With this type of battery it is recommended to charge at the normal rate from start to finish with the constant-current method, and if the constant-potential method is used, start charging at 50 per cent above normal rate and diminish to the finishing rate, so that the average will be normal. Low charging rates are not recommended although they will not do any permanent injury to the cells, but will reduce the speed and mileage of the locomotive on the discharge immediately following.

In reference to the second division of this subject, namely, attendance at the charging station, the desired results may be accomplished by manual attendance or by an automatic switchboard which is practically foolproof. There is not much to say concerning manual attendance. It is not necessary to have an experienced electrician to watch the charging of these locomotives, for almost anyone can be taught to read the ampere-hour meter on the locomotive and note when it shows a full charge or when the hand on the meter comes back to zero. When this happens the shunt-trip circuit breaker should go out, and then the attendant can shut down the charging outfit. The automatic switchboard can be arranged for any number of locomotives, so that as each one receives its full charge it will kick off from the charging set but will allow the set to run until the last battery has received its full charge. This done, the board is arranged to cut out the charging set from the main supply circuit and thus everything will be shut down.

Such an automatic board also takes care of conditions when the main-supply circuit fails, or the voltage becomes too low for proper operation of the charging set. Under such conditions it will shut down the set, disconnect the batteries so that they will not tend to discharge through the set, and when the power-supply returns the set is automatically started, and charging continues. At the plant with which I am connected we have such an outfit in operation and we have not had a regular night attendant in three years to look after the charging. There are many plants that have night watchmen, or men who have other duties to perform and who work in the vicinity of the charging station. Such watchmen can come around occasionally and see that everything is working properly. Such an arrangement saves part of the expense of having a regular attendant for this purpose.

In most cases it has been found advisable to make the motormen and brakemen who operate locomotives responsible for the care of the locomotives. This should be systematized to a certain extent, and the following few rules are suggested:

(1) When the locomotive is brought in and before the lid, or top plate, is removed from over the battery compartment, see that all lamps are extinguished and no open flame around the locomotive. (2) Wipe the tops of the cells off with clean waste or rags if they have accumulated dust and dirt, and in cases where the electrolyte has worked out of the containers it also should be wiped off with clean waste or rags. Cells should be kept dry. Dirt and dampness are likely to cause leaks, which may result in serious injury to the cells. (3) All filling plugs should be removed. (4) Distilled water should be added to all cells requiring it until the liquid reaches the right level. (5) Replace all filling plugs. (6) Plug in charging receptacle plug and shunt-trip connection in locomotive and throw in line switch to the automatic switchboard. (7) Inspect the bolts and nuts of the locomotive and if any trouble of a minor character has developed during the day, repair it before going off duty. In case any repair is needed that would take more

than a half-hour to one hour, report it to the head electrician who will have the work done either then or on a later shift of his men. (8) In the morning before taking out the locomotive read the ampere-hour meter to determine the state of charge and disconnect the charging plugs from the locomotive. (9) Oil up the locomotive and replace the battery cover.

By making these men responsible for their own locomotive, its condition becomes solely their concern and when inspected they cannot shift the blame for any shortcoming on some one else. This has been found to be the case when they did not have these duties to perform.

In filling the cells I would like to bring out the necessity of using distilled water only. If other water is used when it is impossible to obtain distilled water a sample should be sent to the battery manufacturer who will analyze it free of charge and advise whether it would be safe to use it or not. A small amount of impurity in the water will be harmful, as it will always remain in the cell, and as more is added from day to day will in time cause some damage to the plates or other parts.

Use only distilled water for filling up the cells when the water becomes low and keep the cells clean of incrustations and dirt. Overloading wastes good current and should be avoided. Coasting may cause the armatures to burst. Care should be taken to give the locomotive a firm well-ironed track which will not jar either locomotive or battery. Keep a record of cell condition and work performed.

There are times when it is necessary to clean batteries of the Edison variety all over, when they become excessively dirty. When this is the case the cells should be removed from the battery compartment. A jet of dry steam or an air blast is satisfactory in most cases, but must not be used while the cell is in the battery compartment. Incrustations may be easily removed if first moistened with warm water. All cells should be thoroughly dry before being replaced in the compartment.

And now a word as to the proper care to be taken in the operation of the locomotive during the day's shift. This problem must be worked out by the mine foreman and the men at each individual mine and in each place where a locomotive operates. By this I have particular reference to the number of cars handled on a certain grade. I have found motormen, when they could only push, say, four cars up a certain grade when using a reasonable amount of sand, repeatedly try to push up 5, 6 and even 7 cars. They would pull away, take slack, buck up against the cars, turn on full sand supply, and stand and spin the wheels for a considerable period of time. It is needless to say that this is a heavy drain on the batteries, often pulling excessive discharge rates from the accumulator, and yet it does absolutely no good. This procedure furthermore wastes available charge in the battery, which might cause it to be fully discharged before the day's shift is over. Each mine foreman should watch each locomotive on a particular haul and instruct the motorman never to try to pull more than so many cars, empties or loads as the case may be, over his haul. By so doing a great number of cars can be placed on the parting in a given time with far better results from the locomotive itself.

Another practice that should be watched is the overspeeding of the locomotive when traveling on down grades with heavy trips behind it. The storage-battery locomotive is intended mainly for gathering work and is usually designed to operate at a speed of from 3 to 4 miles per hour, under full load and on level track. The motors employed are usually fairly high speed, and in coasting down a hill these locomotives will, if uncontrolled, attain a speed up to 10 or more miles per hour. This will run the armatures of the motors from three to four times faster than the speed for which they were designed, and this may result in the breaking of armature bands or in the coils flying out of their slots, as well as other troubles. The men should be instructed against this practice and watched carefully, as this is a common cause of trouble.

The care of the locomotive during the day's shift is not entirely the concern of the motorman. A bad track will do more harm to the locomotive than almost anything else. Many mines have purchased locomotives to replace mules. A mule, if lucky, can travel over almost any kind of a track; a storage-battery locomotive cannot. In the majority of cases where mule gathering has been in use, and because of the short wheel-base of the mine cars, short-radius curves have been laid from the cross entries into the rooms or from the rooms into breakthroughs or pockets in the pillars. The locomotive is then put to work on these same curves, with resulting trouble from wrecks which not only cause delays and a decrease in the number of cars handled, but give the locomotive severe jars which are bad for arc, bad for both machine and battery.

In many mines fish plates are not placed on the rails on room tracks when mules are used, but when locomotives are employed this should be done since the locomotives are usually heavier than the loaded mine cars and tend to turn over the rail and wreck at the joints. I believe that a storage-battery locomotive will have its overall life increased approximately 25 per cent by operation on a well-laid track. This applies to the battery as well as to the mechanical parts of the machine.

Constant inspection of the locomotive by the mine foreman and his assistants will do much to make the motorman more careful of his machine and cause him to take pride in keeping it in good shape, all of which helps in the upkeep of the equipment.

Keep Records of Condition and Performance

Daily records should be made by the operator of the locomotive of work done as well as of the condition of charge and discharge of the battery. I would state that these records are made to serve two purposes. First, they give operating information, which should be valuable to the company from a cost standpoint, and second, they serve as a notice to the motorman that the officials are finding out each day the amount of work he has accomplished and the condition of his machine.

In these reports space should be given for the ampere-hour meter reading at the start of the shift or after charging, giving the time when meter is read. Space should also be provided for the meter reading when the locomotive is brought in after the day's shift is over, and the time of the reading; spaces for the work done, that is, the number of empty cars placed at the working face

from the parting; number of loads handled from the face to the parting; number of water cars hauled; timber trucks, slate cars, and several spaces for miscellaneous work. The particular entry or haulway where the machine operates should also be noted on this report, while space should be provided for noting repairs that are needed and for repairs made in the shop. The report, when properly filled, should be signed by the motorman and turned over to the head electrician who will note any additional repairs needed or O.K. those already made and forward it to the office.

We instituted this system at the mines where I am employed, and at first met with considerable opposition from the men affected, but when they saw what we were driving at, they "came around" and the plan is now working without difficulty. These men claimed at first that they would not have time to keep track of all the so-called "red tape" if they were going to haul any coal. By giving them each a piece of chalk they tally the cars handled, on a plate on the front of the locomotive, and then count up the tally in the evening when they come in and place the total on the daily report.

Hydrometer and temperature readings should be taken at regular intervals, but this applies mainly to the lead-acid battery. With the lead-acid type of accumulator, the surest way to tell the state of charge is by taking hydrometer readings. These not only show the state of charge but also reveal any cells that are not up to the average of all the cells in the battery. A record sheet should be made at least once each week, giving the reading of each cell in the battery when fully charged.

A sheet may be made up with squares ruled upon it, having the number of squares equal to the number of cells in the battery. The reading of each cell can then be placed in the corresponding square on the sheet, and anyone looking at the sheet could go to the battery and pick out any cell that is not in proper condition.

In taking these readings, if any number of cells is found not coming up on charge with the majority of the cells they should be read every night for awhile, until it is determined that they are not going to revive. When these cells refuse to build up, there is of course a reason, and it can generally be attributed to either a cracked jar, which has let the electrolyte gradually leak out, or to trouble in the plates. In the case of a cracked jar, with the regular addition of distilled water each day if needed, the electrolyte will become lower and lower in specific gravity. This will establish the fact that one of the containers is ruptured.

Order Cells Before Replacement Is Needed

Cells should be inspected at regular intervals, either by a factory representative or by some competent man whenever the battery shows that it is failing. This should not be necessary until about the time of the expiration of the manufacturer's guarantee. In this inspection a few cells should be pulled, selecting those of lowest gravity, taking out the plates and determining the amount of sediment accumulated in the bottom of the jar, as well as the general appearance of the plates. From this an idea can be gained of the approximate life left in the battery so that a new battery can be ordered in sufficient time to be on hand before the old one fails completely.

This condition should be watched with both types of cells, for it is often impossible where locomotives have once been used to temporarily substitute mules or other types of haulage without considerable expense and a decline in output from the section where the storage-battery machine has been in use.

The keeping of records, both of operation and of charging is I believe vital to the proper care of any storage-battery locomotive.

To sum up all the foregoing, the one word "care" will cover everything. It is constant care, week in and week out, month in and month out, that prolongs the life and cuts down delays from all causes with storage-battery locomotives. Care saves loss in tonnage when machines are out of commission, and makes them a good investment for the plant that has them installed.

There are many points concerning the care of batteries that are brought out by the battery manufacturers for their own particular accumulator. These instructions should be carefully read and compliance made therewith by the attendants of these machines. The rules thus formulated are well considered since every battery manufacturer naturally desires his product to stand up well in service. The builders of these machines have therefore promulgated rules which if followed will give maximum life under existing conditions.

Recent New York Events

By R. W. Morris

LOCAL trade interests put in a busy twelve months in 1919. During the year there were two strikes of marine workers which tied up, in various degrees, the shipping in this harbor and resulted in a heavy loss to numerous business interests other than the local coal industry, especially those dealers who make a specialty of the export trade.

The substituting of oil for coal was also a subject for serious thought and in October the Wholesale Coal Trade Association summoned the coal men to a conference at which after a long discussion, a committee was appointed to investigate the entire matter. This committee has already made some valuable investigations and reports which show they are tendering the trade an invaluable service.

Oil consumption cannot yet be said to have secured a firm hold upon local consumers, although several industrial concerns, office buildings and hotels have either made the substitution or have filed applications with the proper City Departments for permission to make the change. To meet these conditions a set of rules and regulations governing the storage of fuel oil has been adopted by the Fire Department.

As it had done in the Liberty Loan campaigns, the trade took an active part in the Victory Bond compaign early in the year and raised $9,500,000, making a total of $62,500,000 in the last four Liberty Loan campaigns, to which should be added a liberal subscription to the first loan which was, however, not recorded with respect to the industry as such. In addition the industry in New York contributed over $300,000 to the Red Cross and United War Work campaigns.

The complaint filed through the Wholesale Coal Trade Association of New York with the Interstate Commerce Commission regarding the tidewater demurrage question in this city was an important step taken to protect the interests of the industry doing business at tidewater points. The prosecution of the complaint, including the examination of many of the witnesses, largely devolved upon Charles S. Allen, secretary of the Association. No decision has yet been rendered.

Reconstruction of a Burned Tipple

By R. W. Mayer
California, Pa.

THE steel tipple at the Crescent mine of the Pittsburgh Coal Co., located on the Monongahela River near California and about 50 miles from Pittsburgh, burned on the night of Dec. 17, 1919. This tipple serves one of the largest mines of the company by which it is owned, ships coal by both river and rail, and the daily output is about 6,000 tons when the mine is running at capacity.

This tipple rests upon three concrete piers. One of these is located between the five railroad tracks which pass under the structure. A second is at the edge of deep water in the river, and the third, or outside pier, is built up in the deep water of the river. The tipple overhangs or extends beyond the end of the third pier and two barges may be placed side by side between the outer and the middle piers.

A combined river-and-railroad steel tipple with wooden floor was gutted by fire probably caused by a short circuit. Reconstruction was immediately begun and rushed with all speed. As a portion of the burned structure spanned main-line railroad tracks, this had to be rebuilt without interfering with train schedules. This was however accomplished without difficulty.

The framework of the structure is of steel and the sides and roof are of corrugated or sheet iron. The floor was, however, of planking spiked to wooden stringers bolted to the steel I-beams of the framework. This flooring together with the window frames and the sashes was the only portion of the structure which was built of wood.

As may be judged from the above description, the major portion of the tipple structure lies over the river. At this point there is only a narrow bench of land between the water's edge and the foot of the high hill which rises abruptly from the inner side of the bench. The Monongahela branch of the Pennsylvania R.R. occupies most of this narrow river flat with its double tracked line. The balance of the space under the tipple is taken up by the three sidetracks for loading coal from the tipple to railroad cars. The opening of the mine which this tipple serves is in the side of the hill above the railroad and a bridge or extension of the tipple structure connects the opening to the tipple proper. The coal bed lies considerably lower than the water level of the river, and a slope or incline leads from the mine opening to it. This is several hundred feet long and the loaded cars are pulled upward by means of a heavy chain haul, while the empties are lowered on a second track by a similar means. The mine opening is, however, somewhat lower than the dumping floor of the tipple, and a chain haul pulls the cars over the bridge to the tipple where they are landed at the mine scales and weighed. From this point they gravitate to the various crossover dumps in the tipple.

The railroad company has a watchman's shanty near the tipple, and a man is stationed at this point at all hours to keep watch and give warning of any landslides which may occur on the side hill above the railroad track. The hillside is here quite steep and slides are always liable to occur. The watchman has a good view up and down the track for a considerable distance.

This watchman was the first to discover the tipple fire on the night of Dec. 17. This started about ten minutes before midnight, its probable cause being a short-circuit in electrical conductors or wires in some way damaged. The fire started at the inside or shore end of the tipple next to the bridge, and the bridge was the first portion of the structure to be completely burned. The fire then moved toward the water end of the tipple. The bridge was consumed in about an hour or by 1 o'clock on the morning of Dec. 18. The mine cars were oiled at the inner or tipple end of the bridge near the place where the fire started. Considerable oil was here spilled over the floor and some barrels were stored here. These exploded and scattered their burning contents.

Trains on the railroad were held up while the tipple was burning. The heat from the fire was, as might be expected, most intense, on the bridge, and the steel of the structure was badly twisted and warped out of shape. All of the woodwork in the tipple proper was destroyed, but the structural steel was not materially damaged.

A considerable quantity of coal dust was scattered over the floor of the tipple and had settled upon the walls. There was some coal, also, in the chutes, and the machinery, with which the tipple was well supplied. This coal was burned and possibly accounts for some of the intense heat generated, as the actual amount of woodwork in the tipple structure was small.

Railroad wrecking crews with the aid of derricks cut down the bridge across the tracks and removed the debris, throwing it on a side track next to the river. The tipple itself was gutted. Looking upward through the building after the fire, the steel cars could be seen standing on the crossover dumps near the top of the building. The machinery which was fastened to the steelwork was still in place, but that which was attached to the floor feel down into the river.

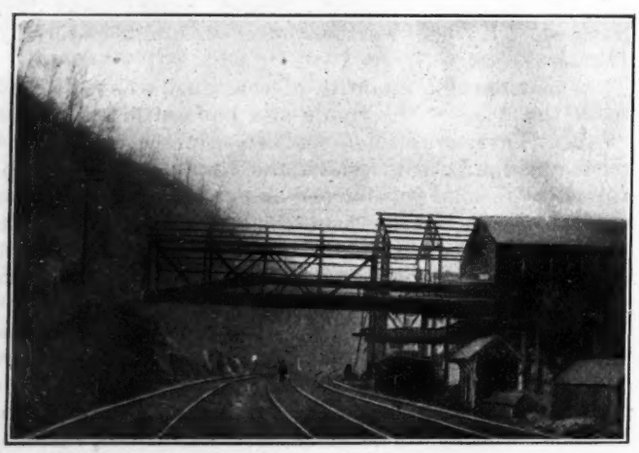
Reconstruction was begun at once. Structural steel for the bridge was not immediately available, and this delayed the work somewhat. A steamboat was tied up at the tipple and used as living quarters for such of the workmen as could not obtain accommodations in California. Lumber from a barge was hoisted to the outer end of the tipple from the river, and the work of replacing the floors and stairways preparatory to reinstalling the machinery was begun. A scow dredge having an orange-peel bucket was employed to fish the machinery out of the river under the tipple and to remove the coal and other debris so that the channel would be deep enough to allow the free passage of loaded barges. The steel bridge across the railroad

tracks was constructed as soon as structural shapes for the purpose could be obtained. One of the accompanying illustrations shows the bridge framework completed but not yet roofed over. It also shows the end of the tipple which had to be repaired, the steel

GENERAL VIEW OF TIPPLE
Showing construction boom on car truck.

work is finished but not yet roofed. This picture also shows the derrick which a 70-ft. boom mounted on railroad-car trucks which was used to hoist the material into place on the bridge and tipple.

The oxyacetylene torch or blowpipe was extensively employed to cut the material for the bridge. It was also used in cutting up the scrap steel for loading onto railroad cars for shipment. The bridge had to be so constructed as to not interfere with train schedules as the trains pass underneath the tipple at frequent intervals. While this work was being done, two watchmen were employed, one above and the other below the tipple to signal the trains and workmen on the structure.



DAMAGED END OF TIPPLE EXTENDING OVER RAILROAD TRACK

It was expected that the bridge and inner end of the tipple would be sufficiently complete to run coal some time during the week of Jan. 12. This coal would, of course, go to railroad cars. It will require a somewhat longer period before the outer end of the tipple is completed and the necessary machinery installed for loading river barges. The ice formed in the river during the cold spell early in January did not interfere with dredging, neither did it seriously delay the reconstruction of the tipple, although it somewhat hampered the work. Great care had to be taken by the men in order that no accident might happen because of the large number of trains that passed by during the day.

More Details of A. I. M. E. Discussion

The secretary of the American Institute of Mining and Metallurgical Engineers, 29 West 39th St., New York City, informs *Coal Age* that President Horace V. Winchell, who retires at the annual meeting in February, and Herbert Hoover, who succeeds him, have definite plans for a discussion regarding what they feel is the most vital matter of professional interest now before the public—the irregularity in the operation of coal mines.

They believe that this discussion will materially help to solve the problem, and the time to be devoted to it is to be extended so that it will take three whole sessions at the forthcoming annual meeting, Feb. 16 to 19. Each session will be followed by an open forum. The review to be presented by Mr. Hoover will cover the causes, nature and cure of intermittency in the operation of coal mines.

The following speakers and their papers will cover the fundamentals of the problem:

"Problems of the Coal Industry," by Van H. Manning. An introductory statement outlining the problem under discussion and indicating its relative significance as compared to other problems of the coal industry.

"Fluctuation in Production of Coal—Its Causes and Effects," by George Otis Smith. A statistical analysis of the rate of output over a period of years, indicating the relative effect of shortage of transportation, shortage of labor, lack of market and other factors in producing intermittency in the operation of coal mines.

"Storage of Bituminous Coal and Its Possibilities as a Means of Stabilizing the Industry," by H. H. Stoek. Storage of bituminous coal (a) at the point of production; (b) at centers of distribution; (c) by the consumer. Capital cost and operating cost of storage; breakage; loss in weight, loss in heating value, spontaneous combustion.

"Transportation as a Factor in the Irregularity of Coal-Mine Operation," by G. W. Reed. Exact data as to the real effect transportation facilitates have on coal production; use of cars for storage; effect of more equipment and its cost to the railroads, effect of lower rates in spring and summer, reduction of cross hauling, long hauls by the railroads of their own coal. This topic should be presented from the viewpoint of what the railroads may reasonably be expected to do, rather than what would most benefit the mining industry.

"Stabilizing the Market," by Eugene McAuliffe. Variations in the market demand for coal; possibilities of a sliding scale of prices that will produce regularity of buying. Effect of varying freight rates on the market. Relation between the total demand and the productive capacity. How to provide markets for present productive capacity.

The Institute cordially urges all coal people to attend this convention and participate in these sessions.

Coal Age Index for Last Half of 1919

The index to *Coal Age*, Volume 16, covering the last half of 1919 is now ready for distribution, and will be sent free to anyone addressing a request to the subscription department of *Coal Age*, New York City.

Dangers of the Oil Room

By R. S. Rickard
Fort Wayne, Ind.

IN CONSIDERING the dangers attendant upon the storage and handling of oils, we are apt to think only of gasoline and naphtha. This is a great mistake, as every oil carries with it a menace to life and property and its handling should be safeguarded in every possible manner. Until this fact is universally recognized and all oils are handled in fireproof, evaporation-proof steel storage tanks, we must expect to pay an enormous fire loss due to the careless handling of these products. It is true that the danger in handling gasoline is greater than in handling other oils. This danger is, however, well known,

All petroleum products, including lubricating oils, produce an explosive vapor. The danger from lubricating oils, however, is chiefly from spontaneous combustion where waste, sawdust or shavings are used to absorb the oils spilled on the floor. Many fires in factories and oil rooms have been traced directly to this cause, as it is a common practice to neglect the accumulated refuse, which in time, bursts into flames.

The gravest danger that confronts the consumer of oils aside from the gasoline menace is, however, from the paint oils, such as linseed oil and turpentine. A piece of cotton waste saturated lightly with equal parts of linseed oil and turpentine will, if left in a closed room, such as an oil house or storeroom for the night, burn from spontaneous combustion in three hours' time. Instances are not even lacking of fires being started in this manner when the water or oil-soaked cloth was left in the open air. The property loss arising from such spontaneous fires is appalling, but who can estimate the value of lives sacrificed annually to the mistaken policy of "economy" in equipping an oil room?

Increased Oil Price Demands Proper Storage

The increasing prices of all kinds of oil and general economic requirements, demand the proper storage and distribution of these liquids. Millions of dollars are lost annually through the deterioration of the quality and waste in handling of improperly stored oils. Hot and cut bearings, prematurely worn machinery are frequently due to deteriorated or contaminated oil. This enormous loss is usually never traced to the right source—poor oil storage. The same criticism can be made of improperly stored paint oils, varnishes, dryers, etc. Competition in practically all lines demands economical production and this means elimination of waste so far as possible in every department of industry.

Oils, and similar products can be "checked in" as they are received and accurately recorded as they are used. Exactly as accurate records may be kept of oils as tools.

Modern storage equipment for handling liquids is really divided into two general types. One for handling volatile liquids, such as gasoline, naphthas, paint oils and varnishes and the other for handling non-volatile liquids such as lubricating oils.

The first of the two general types requires underground storage tanks for gasoline or naphtha and above-ground storage for the paint oils and varnishes. This arrangement usually meets with the demands of the various state laws governing this type of storage. Where underground tanks are required they should be cylindrical in form. If made of galvanized steel all seams and riveted joints should be carefully made and then soldered inside and out. If heavy metal is employed $\frac{3}{16}$-in. steel or heavier as conditions or the capacity of the tank make necessary, all seams and rivets should be carefully caulked. Storage tanks for volatile liquids require special care in construction. A tank may hold water or steam pressure but be entirely unfit for volatile liquid storage purposes.

Above-Ground Tanks Are Usually Rectangular

If above-ground tanks are essential these are made in rectangular shapes. For convenience the height and length may remain constant and the width vary according to capacity desired. This arrangement permits the addition of other individual units to the system and does not destroy the uniformity of the battery of storage equipment. Rectangular tanks should be made with the same care as the cylindrical designs.

Specially designed pumps of either measuring or non-measuring type may be connected by pipe lines to tanks buried underground or inserted in the top of tanks for above-ground use. Accurate devices are provided on the measuring pumps for the delivery of desired quantities of liquid. Gear-driven meters may be added for the purpose of checking consumption. Locks may be fitted to both types of tanks and on the pumps as well. This prevents unauthorized usage and theft.

Barrel Drainers Used With Batteries

Where a battery of individual units is employed barrel track and barrel drainers are used in connection with small chain hoists. This makes it easy to handle the barrels and drain them completely into the tanks. This saves labor, time and liquid and prevents the loss arising from the return of liquids in barrels which have not been properly drained by the old-style spigot method. Furthermore, dirt, dust and sediment are kept from the liquids, fire danger is reduced, storage space is saved, labor is lessened, and the cost and consumption may be easily calculated.

New Operators in Montana

Taking mining conditions as a whole in Montana I am satisfied that there is an upward trend. It is true that in some of the mines things are not what we would wish them to be, and it is also true that there are a few mine officials who do not realize the necessity of doing all they can toward ventilating their mines properly, yet taking the mine operators as a whole they are doing good work along this line, and some spare neither time nor money to keep their properties in first class shape. Much credit is due them for so doing.

Operations have commenced to open up in some new coal fields in this state, and as soon as the strike is settled we can look forward with a good deal of optimism so far as the coal trade is concerned. The quality of our coal is satisfactory.

Shots Fired By Lightning Discharges*

By M. Ferey
London, England

IT SEEMS that outbursts of gas sometimes occur in Rochebelle and Fontanes mines, and special precautions are taken to prevent injury to workmen. In the headings, coal is shot from the solid electrically after the workmen have left; shots are fired from points as far distant as possible from the face or from a higher level.

As it was found impossible to be sure of the firing of 30 to 50 shots distributed over the workings at a distance of 1¼ miles or more, it was decided to use 120-volt direct current from the lighting circuit.

Current in the conductors used for firing shots in the mine induced from lightning discharges during a thunderstorm was responsible for the ignition of certain charges of explosives in place and connected ready for firing. Several successive steps or alteration of firing equipment were necessary before this danger was overcome.

As this system was originally installed, connections were made at the top of the shaft. A separate wire led to each section where a group of shots were to be fired and the current was switched into these wires as desired, return being made through the ground. The conductors in the shafts were galvanized iron supported on porcelain insulators; in the roadways old cables or bell wires were employed and in the vicinity of the workings galvanized iron wires, about 1¼ in. in diameter. The detonators in each working place were connected just before the workmen left.

On June 10, 1905, during a storm, shots went off in two places at about 4 p.m. after the workmen had gone. These places were 1,600 yd. and 1,540 yd. respectively from the firing station. As no connection to the dynamo had yet been made, it was evident that the ignition of the shots arose from electric disturbance and not to current from the lighting system. After this the lines were cut at the bottom of the shaft and switches installed. These were closed just before the shots were to be fired, and later opened by the men examining the mine after the firing was complete.

In spite of this, another accident occurred on Aug. 25, 1905, when six shots exploded about 10 p.m. at a distance of 1.430 yd. from the firing station. It was found that the wire had been properly disconnected near the shaft bottom. After this, when the firing circuit was disconnected from the lighting circuit at the surface it was grounded in such a way that a gap of slightly over 3 ft. was left between the terminals of the lighting and the shot-firing circuits.

In 1906 Wires Replaced Cables

About the end of 1906 the bare wires in the shafts were replaced by armored cables and the firing station was somewhat changed. A switchboard was provided to which the wires forming the lighting circuit were led. These wires were connected through a lamp that glowed when the current was switched on at the lighting station. There was also a double-pole switch, which connected one side to the ground, and the other to a series of six telegraph keys or single-pole switches. These lines were provided with fuses, and there was also an ammeter in circuit.

When the operator is ready to fire shots and the glowing of the lamp indicates the connection of the circuit, he closes the two-pole switch. The ammeter should read zero. He then presses the keys in any desired order, and as he closes each one, observes the ammeter. If the meter moves slightly and indicates less than 2 amperes, the shots are fired properly but if it shows a larger current a short circuit is indicated. The examiners do not enter the mine until 10 min. after the shots have been fired. Two men are assigned to each section and are equipped with three lamps, one of which is electric.

Apparently this arrangement was perfectly satisfactory and authority was obtained to dispense with the return wire, but on Oct. 2, 1913, at 2 p.m., three shots went off during a storm. This occurred in a wet rise working under nearly horizontal roof. It happened 5 minutes after the workmen had connected the detonators and left the workings. In two neighboring rooms, the men had not yet charged their shots.

In this case it was found that the shaft conductors had been properly grounded. After this a second gap was established, similar to that at the shaft bottom, at about 110 yd. from each of the workings. An examination showed that the working place in which these shots had been fired was the one nearest to the station on a horizontal projection, nearly 1,370 yd., at an average depth of 660 ft. below the surface. The actual length of cable was 2,780 yd. The circuit served these workings only and was in an extremley damp part of the mine. No sparking was noticed at the time. The two cables serving this section followed the line of an air main up to a point 1,640 yd. from the shaft. Their distance from this main was 7¾ in. and in some cases less, and it is impossible to say positively that sparking did not occur between the main and the cables. Such sparking has been observed during the progress of storms on several occasions in the shafts as well as in the roadways.

Lightning seems to have caused the explosion on June 10, 1905, having passed by way of the iron guides to the bare cables, and this may have been true of the other occurrences, if a spark or slow discharge was produced in a damp atmosphere. However, no deterioration of the cables or any of the shot-firing appliances was noticed. These incidents have always occurred at a distance from the shaft while a direct discharge at the surface would have found an excellent ground. Therefore it is probable that the cause was induction from atmospheric discharges. Only a feeble current is required to discharge detonators. Each line having a resistance of .62 ohm and requiring a current of .7

*The firing of shots by electricity induced in the underground conductors by electric storms on the surface has been described in a paper by M. Ferey contributed to the Société de l'Industrie and published some time ago in the *Colliery Guardian*.

ampere with a pressure of 1.5 volts is capable of firing three detonators in series.

After this last explosion it was decided to break each branch line by a gap placed at the entry of the section served by it and as near to the workings as possible, as it was feared that a discharge might occur at the moment when the shots were being connected and that besides injuring one or two men an outburst of gas might be precipitated which would perhaps cause the death of others. Since this last gap has been installed the disconnection is made, and the wire is grounded by men carrying out the examination, while the connection necessary for firing the shots is made at the end of the shift by the last workmen to go out. The effect is to diminish the capacity of the wires and the inductive influence of the atmosphere.

A return wire is required by the mining regulations and the wires in this case will be completely insulated. Armored-insulated cables will be installed in the main roadways similar to those in the shaft but the gap retained both at the shaft bottom and near the faces. Each cable will contain two conductors and will be buried in the haulageway at a mean depth of 4 in. so as to be protected from falls or derailed cars. They are designed to allow the firing of 20 to 30 shots in series, in three or four equal groups by means of branches at a distance from the firing station up to 2 to 2½ miles. The gap near the shaft bottom will be about 3 ft. in length to avoid the direct effect of lightning, while those near the workings will consist of double-pole switches. From these switches bare wires will lead in pairs to the circuits as there is less possibility of induction in these short spans.

Welfare Work in Wyoming in 1919

By Robert T. Sneddon

State Coal Mine Inspector, District No. 1, Diamondville, Wyo.

Wyoming's State Board of Education has recently undertaken the organization of evening school classes where mining subjects may be taught. A few classes were organized during the fall and others will be opened during the current winter. The courses given in these classes include mathematics, mine ventilation, mine gases, timbering, drainage and such other subjects as will be of assistance to the men in their daily work and will help to prepare them to pass the state mine examinations.

This work is organized under the provisions of a Federal law known as the Smith-Hughes Act, which was passed by Congress three years ago. This act provides funds for each state to use in promoting various forms of trade and industrial education, including work in evening schools. There is also a small amount of state money available for such work. The state board does not expect to dictate as to just what work is to be given, but rather expects to try to offer a course in any subject for which there is a demand. Under the provisions of the Federal act the funds available may be used for instruction in any subjects which "are supplementary to the daily employment" of the men in the class, and there are no restrictions as to the course of study or the length of the course.

The usual practice is to organize "unit" courses, dealing with a single subject, such as mine ventilation. Classes will meet about twice a week for two hours at a time. Each course will extend over a few weeks, depending on the nature of the work, and when that course is completed a second "unit" is taken up dealing with some other subject. A teacher is secured who is thoroughly acquainted with mine work, and assistance is given him in organizing his work and in teaching the classes.

This project should be welcomed by the operators and workmen alike and every assistance ought to be given the State Board of Education to make the scheme a success. It is only by the co-operation of all concerned that results can be obtained.

Estimated 1919 Coal Production, by States

On Jan. 5, 1920, the Geological Survey published the bituminous-coal output to be 458,063,000 tons.

State estimates, like that for the country as a whole, are based on weekly reports of cars loaded by the 137 principal bituminous carriers, furnished the Geological Survey through the courtesy of the U. S. Railroad Administration. Past experience indicates that the error in the estimate of total production for the country probably does not exceed one per cent. In the case of the individual states, however, the error may be greater. When a carrier originates coal in more than one state it is sometimes necessary to apportion its tonnage arbitrarily, a task exceptionally difficult for the last two months of 1919 when the strike made conditions everywhere abnormal.

ESTIMATED PRODUCTION OF BITUMINOUS COAL IN 1919, BY STATES, WITH COMPARATIVE FIGURES FOR 1917 AND 1918

(Net tons)

State	1917	1918	1919 (Estimates)
Alabama	20,068,074	19,184,962	15,230,000
Alaska	53,955	75,606	53,000
Arkansas	2,143,579	2,227,369	1,680,000
Colorado	12,483,336	12,407,571	10,100,000a
Illinois	86,199,387	89,291,105	64,600,000
Indiana	26,539,329	30,678,634	20,500,000
Iowa	8,965,830	8,192,195	6,300,000
Kansas	7,184,975	7,561,947	5,750,000
Kentucky	27,807,971	31,612,617	28,500,000
Maryland	4,745,924	4,497,297	2,970,000
Michigan	1,374,805	1,464,818	930,000b
Missouri	5,670,549	5,667,730	4,060,000
Montana	4,226,689	4,532,505	3,300,000
New Mexico	4,000,527	4,023,239	3,170,000
North Dakota	790,548	719,733	750,000c
Ohio	40,748,734	45,812,943	35,050,000
Oklahoma	4,386,844	4,813,447	3,200,000
Pennsylvania (bituminous)	172,448,142	178,550,741	145,300,000d
Tennessee	6,194,221	6,831,048	5,150,000
Texas	2,355,815	2,261,135	1,600,000a
Utah	4,125,230	5,136,825	4,570,000e
Virginia	10,087,091	10,289,808	9,500,000
Washington	4,009,902	4,082,212	3,100,000
West Virginia	86,441,667	89,935,839	75,500,000
Wyoming	8,575,619	9,438,688	7,100,000
Other States	161,820	95,806	100,000
Total bituminous	551,790,563	579,385,820	458,063,000
Pennsylvania (anthracite)	99,611,811	98,826,084	86,200,000
Grand total	651,402,374	678,211,904	544,263,000

(a) Estimate of State Mine Inspector, modiod to exclude washery refuse.
(b) Based on reports of State Department of Labor for first eleven months with estimate for December.
(c) Estimated from report of State Mine Inspector for year ended October 31.
(d) Exceeds tonnage reported by State Department of Mines, which, however, does not include wagon mines.
(e) As reported by State Mine Inspector.
(f) California, Georgia, Idaho, North Carolina, Oregon and South Dakota.

Glancing over the table it will be noted that the amount of coal produced during 1919 has fallen considerably below the two years of 1917 and 1918. There have been some changes in the position in the rank of the states due to their output, but these are only minor, the large producers still holding their own. The grand total of 544,263,000 tons is a decrease of 133,948,904 for 1918 and 107,139,374 tons as compared with 1917.

The entire table is subject to revision, as reports on the year's operations are received from the mines themselves.

Deal Squarely with the Railroads

No Republic Is Secure That Does Not Use All Its Citizens Justly

BY R. DAWSON HALL

IT HAS been so customary to find fault with the railroads that it is now hard to try their case without prejudice. And yet it should not be difficult to be just to our transportation systems, because they have done more than any other single agency to build up the country and even to save it from famine and distress.

When the railroads were introduced every region that had no iron tracks had frequent meetings of the citizens to discover ways and means to induce railroad promoters to undertake the risk of making the necessary cuts and fills and of laying the rails that would put the region in touch with the market and so build up its trade. Every town and village was using all its powers, financial, political, and personal, to induce the laying of the railroad line where it could get the benefit. The railroads quite generally failed to make dividends and went bankrupt, but the towns through which they passed became prosperous, and the citizens enjoyed luxuries they had never experienced before. We too often forget the long fights that were waged between community and community to get possession first of the priceless benefits of rail transportation. After a while however, after the railroads had made our country the wonder of the world, after they had created strings of thriving towns, made possible the opening of many mines, given markets to the farming sections, the people in general forgot about the losses incurred by the railroad investors and the gains the public had made through the advent of the roads and they began to demand of the railroads low freight rates and the Interstate Commerce Commission was appointed to regulate all transportation charges.

In 1914 the Division of Valuation of that Commission was formed to find out what was the real value of the railroads, that is the cost at which they could be replaced with and without allowance for depreciation. Reports have been made on 55 roads, and 50 more reports are tentatively completed. The *Railway Age* recently declared that it is too early to draw final conclusions, but the total cost of reproduction exceeds the investment carried on the railroads' books in all but nine of the first 52 valuations completed. It is too soon perhaps to base an argument on the showings, for the reports on the largest railroads are still not delivered, but if the valuations are based on the present post-war costs of everything used on railroads and on post-war labor costs it will be found in all probability that the investment account is too low and that the net capitalization, which is lower than the investment, is far lower than the replacement value. This has come about by the squeezing out of water, the ploughing in of returns and the enhancement of values. The public has no legitimate quarrel with the railroads, rather it is the other way about. An open letter to Senator Cummins is printed herewith. Many people disapprove of the Cummins bill for good reasons, but it has one great merit in that it shows a realization that the public which is making a demand that the railroads operate for a low rate of profit (such as the smaller class of cities and the Governments of Europe are paying as interest on their gilt-edged bonds) shall assure the railroads of at least that minimum, whether the freight rates ordered permit the making of that interest rate or do not.

It remains to be seen how Senator Cummins' arrangements differ from Government ownership. What the railroads can decide for themselves seems limited mainly to a choice of the color of the paint on their car bodies and even these artistic joys may be taken away by the zeal of the Nation's constituted authorities, whose wisdom fails to be exhibited in their railroad control.

HON. ALBERT H. CUMMINS
Chairman, Joint Conference Committee, H. R. 10453
U. S. Senate, Washington, D. C.

Dear Sir:

I have before me the Memorial of the National Shippers' Conference and side with a few of its suggestions, but I do not agree with its disapproval of the guaranteed return to the railroads, for if to give that assurance is socialistic, so are all the other regulatory measures already passed.

The railroads are entitled to the benefits of socialism equally with its disadvantages. They have been milked by socialism, let them at least be fed by it.

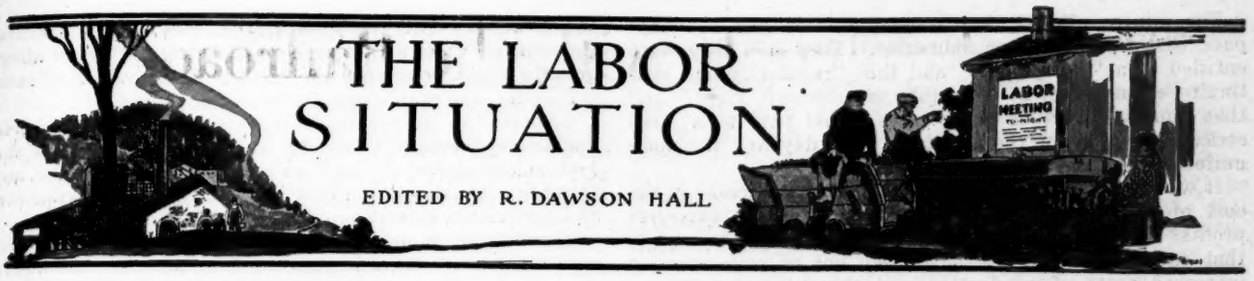
If the guaranteed return costs the shipper $150,000,000 a year, that is only the price of one good or fairly good meal ($1.20) once a year from every person in the United States. We can surely endure this if we can only make our railroads sufficiently prosperous to conduct the business of the country efficiently.

I am not opposed to the idea of having some more satisfactory board than the Interstate Commerce Commission (which wrecked the railroads) pass on railroad rates. In fact, I believe the I. C. C. has so deserved of the public that its dismissal should be demanded. The Memorial of the shippers states: "The Interstate Commerce Commission merits the continued confidence, support and respect of the people of the United States; and its power should remain unabated and should be added to, so as to enable it to effectually deal with our national transportation problems."

I would accept all this if it were liberally sprinkled with "nots."

Very truly yours,

R. DAWSON HALL,
Managing Editor, *Coal Age*



THE LABOR SITUATION

EDITED BY R. DAWSON HALL

Miners' Demands Un-American

Upon the resumption of the hearings on Jan. 27, before the commission of three, appointed by the President to investigate the bituminous coal industry, Don Rose, an attorney of Pittsburgh, representing the operators of the Freeport district, denounced the demands of the miners for a 60-per cent wage increase along with a 6-hour day and a 5-day week as "unthinkable and un-American."

Mr. Rose told the commission that the operators could not believe that the miners' organization seriously advocated the 6-hour day with a 5-day week, and he declared that such a proposition meant "industrial chaos for the nation."

"As we view it," said Mr. Rose, "the miner's demand for a 6-hour day and a 5-day week, coupled with his demand for time and a half for overtime and double time for Sundays and holidays, seeks to achieve two results: first, an indirect increased wage; and second, limitation upon production. Under the Lever law both these propositions are illegal. We believe them to be un-American. We regard them as an attempt to make of the miner a favored class."

Acting-President John L. Lewis of the United Mine Workers, upon the conclusion of Mr. Rose's statement, protested against the characterization of the miners' demands as un-American. "We do not understand that the Americanism of the miners is on trial," said Mr. Lewis.

At the outset of the hearing Chairman Henry M. Robinson announced that the commission would go into the manner in which the recent 14 per cent wage increase to the miners had been applied. Miners' representatives had charged before the commission that some of the oprators were passing this advance on to the public, instead of absorbing it. The operators' representatives have informed the commission that the 14 per cent advance, so far as they know, has been met by the industry.

In his announcement, Chairman Robinson said: "Requests from several districts have been presented to the commission for its determination of questions arising out of the application of the 14 per cent average advance.

"It is fair to assume that the President expected that the 14 per cent average increase would be applied by the operators and miners in a manner to stabilize the industry pending the survey and final award of the commission. In making its final award the commission will consider and determine the application of the 14 per cent average wage increase."

The miners began today submitting statistical data before the commission in support of their demands for an advance in wages, shorter working hours, and other points in controversy. The operators' data, to back up their opposition to miners' demands, will be put before the commission later in the week.

Hoover Advocates 6-Hour Day

In the presentation of the miners' data, Van H. Bittner, of Pittsburgh, urging the 6-hour day, declared that Herbert Hoover, former Food Administrator, had, as manager for the Durham Coal Mines in Northumberland, Eng., said he would not work men in the mines in shifts over six hours "if he had the opportunity." He cited this, he said, to show that Mr. Hoover was an advocate of the 6-hour day for the miner.

Along with the presentation of the statistical data by Mr. Bittner, the miners prepared a statement summarizing the grounds on which their demands for a wage increase, with punitive overtime payments, were based. The miners declared that all their wage increases, received during the war period, including the 14 per cent increase, do not equal the increase in the cost of living and that the present wage is "even more inadequate than the pre-war wage."

Working Days, Employees, Tonnage per Man, Strike Activity and Hours Worked in 1918

State	Average Number of Days Worked	Number of Employees	Average Tonnage per Man Per Year	Average Tonnage per Man Per Day	Strikes in 1918: Number of Men on Strike	Strikes in 1918: Total Days Lost	Strikes in 1918: Average Days Lost per Man	Length of Established Working Day in 1918: 8 Hours — Mines	8 Hours — Men	9 Hours — Mines	9 Hours — Men	10 Hours — Mines	10 Hours — Men	All Others Men
Alabama	278	26,221	732	2.63	1,952	3,259	2	235	24,129	3	72	8	872	1,148
Arkansas	204	3,978	560	2.75	1,207	4,292	4	74	3,416	1	8	1	13	541
Colorado	255	14,483	857	3.36	464	2,318	5	169	13,741	1	99	1	2	641
Georgia	258	190	.....	....	230	1,610	7	.....	.....	...	.....	...	.....	.....
Illinois	238	85,965	1,039	4.37	10,251	74,850	7	454	85,320	3	33	...	.....	612
Indiana	227	30,376	1,010	4.45	8,083	51,015	6	255	28,612	1	15	...	.....	1,749
Iowa	245	13,328	615	2.51	997	4,774	5	125	12,242	1	12	...	.....	1,074
Kansas	234	10,665	709	3.03	4,675	25,047	5	141	9,672	...	.....	...	.....	993
Kentucky	230	39,342	804	3.50	1,226	15,318	12	376	26,601	93	5,271	55	4,363	3,107
Maryland	261	5,568	808	3.10	2,517	5,402	2	85	5,334	...	.....	...	.....	234
Michigan	237	2,558	573	2.42	1,367	18,194	13	21	2,526	...	.....	...	.....	32
Missouri	235	9,590	591	2.51	1,191	5,800	5	149	8,685	5	99	2	31	775
Montana	264	4,559	994	3.77	218	218	1	44	4,470	...	.....	2	8	81
New Mexico	301	4,095	982	3.26	.....	.....	..	32	4,023	1	34	...	.....	38
North Dakota	229	828	869	3.79	22	166	8	16	464	1	15	9	142	207
Ohio	223	48,450	946	4.24	4,993	44,837	9	635	46,184	9	242	15	645	1,379
Oklahoma	228	8,451	570	2.50	630	12,294	20	109	7,777	2	109	1	10	555
Oregon	292	40	.....	....	.....	.....	..	1	30	...	.....	...	.....	10
Pennsylvania (bituminous)	269	174,306	1,024	3.81	12,852	112,929	9	1,698	151,586	146	7,439	52	4,198	11,083
Tennessee	265	10,694	639	2.41	835	2,454	3	109	8,380	5	422	2	849	1,043
Texas	262	3,936	574	2.19	55	550	10	16	2,074	15	855	6	577	430
Utah	258	4,160	1,235	4.79	30	30	1	26	4,111	1	5	...	.....	44
Virginia	277	11,004	935	3.38	523	10,241	20	84	8,916	16	1,034	8	514	540
Washington	275	5,109	799	2.91	75	1,275	17	51	5,070	...	.....	...	.....	39
West Virginia	238	89,530	1,005	4.22	5,712	42,009	7	915	58,782	263	23,540	54	3,385	3,823
Wyoming	268	7,554	1,249	4.66	.....	.....	..	51	7,194	...	.....	...	.....	360
Other States	...	325	.....	....	.....	.....	..	.....	.....	...	.....	...	.....	.....
Total bituminous	249	615,305	942	3.78	60,105	438,882	7	5,871	529,339	567	39,304	216	15,609	30,538
Pennsylvania (anthracite)	293	147,121	672	2.29	19,290	69,644	4	362	147,121	...	.....	...	.....	.....

*U. S. Geological Survey, Department of the Interior. This table was released last week.

The miners alleged that wage increases had not kept pace with those in other industries. They said they were entitled to a "living wage" and that "regularity and continuity of employment constitute an economic right," and that punitive overtime wage rates would tend to a more strict observance of the standard work day and for more uniform employment.

It was also alleged by the miners that the increase in the cost of coal to the consumer has been due to "excessive profits" of the coal industry rather than to wage increases; that earnings and profits have been out of proportion to increased costs of production and that the 14 per cent wage increase has been passed on to the public.

President Philip Murray, of the Pennsylvania bituminous miners, at the beginning of the day's hearing, submitted new demands of the miners for the abolition of the differential between the thick and thin vein mines of the Freeport district and also demands for pay for removal of "bone coal," and free supply of powder and electric cap lamps.

Mr. Rose, representing the operators of the Freeport district, analyzing the demands as put forth by Mr. Murray, declared that there was actually only one issue before the commission, and that was the wage scale. The demand of the miners for the abolition of the differential and the other technical demands, he said, all were aimed, in an indirect way, at getting an increase of wages, although the miners had sought to cover the real intent.

Mr. Rose explained that the basic purpose of the differential, which he said the miners had assisted for years in establishing, was to assure an equal earning capacity of the miners in the various districts. "We believe that equality of potential earning power on the part of the miner to be the proper criterion for determining the fairness and advisability of this differential," said Mr. Rose.

The handling of the cars, provision for powder, and the charge for use of the cap lights were said by Mr. Rose to be incidental to the miner's end of the industry, long established by custom and already accounted for in the established wage scales. "The increases contended for are of an indirect nature," said Mr. Rose, "increases which the miner thinks perhaps he can obtain concealed from public view. We submit that there is no justification for putting upon the public the extra burden of expense which would result from the granting of these demands."

Operators Agree with Mr. Lewis

Mr. Rose informed the commission that as to the general demands advocated by Mr. Lewis, the position of the Freeport district operators coincided with that already taken by the operators of the four States of the Central Competitive District.

"We cannot believe that the miners' organization seriously advocates a 6-hour day with a 5-day week," said Mr. Rose. "It is an un-American proposition. If it is good for the miner, it is good for the man in other walks of life. The clerk who works in a dingy office, over a desk, with artificial light, is in more need of a 6-hour day than the man who toils.

"We do not believe that the miner is sincere in this demand. We believe that he does not seek a 6-hour day unless there is coupled with it time and a half for overtime, in which he will work eight or ten hours, as the case may be, and thus convert the grant of the demand into a wage increase.

"The inconsistency of the two demands, insofar as work-days are concerned is self-evident. The demand that double-shift of work on coal for commercial tonnage be abolished is a direct attempt to limit production.

"We submit that the demands for a 60 per cent increase, if granted, together with the 6-hour day, a 5-day week, and time and half for overtime, *would put a price upon the cost of coal that would stagger even the American people*; that it would create of the miner a favored class, enjoying a wage and working condition and hours of leisure far above any other class of American labor."

In objecting to the statement that the miners' demands were "un-American," Acting President Lewis of the miners said that the miners yielded to no one in their allegiance to the American flag, the government, and the traditions of the country. "We do not propose to be tried as to our allegiance to those principles and ideals, at the whim of every individual who may disagree," said Mr. Lewis.

Commenting on the moderation displayed by both sides during the hearings, Chairman Robinson said: "We ask that both sides refrain, as much as possible, from injecting anything into the discussion that is personal or temperamental, if I may say it, as distinguished from impersonal facts."

Mr. Bittner, in presenting statistical data for the miners, said the demand for a 60 per cent wage advance was figured so as to include losses sustained by the miners during the period from November, 1917, to December, 1919, when they had no wage increases, yet had to meet a constantly rising cost of living. If this loss was spread over the next 24 months and raises granted to bring wages up to present living requirements, he said, it would amount to 60 per cent computed on a tonnage basis.

Average wages in the mining industries had not increased in the same proportion as in other basic industries, said Mr. Bittner, who quoted figures tending to show that the average increases for most of the miners was 50 per cent over the 1914 scale, whereas in the iron and steel industry they had risen, for most men, up to 125 per cent, and in the railroads about 75 per cent.

Commission Reconvenes To Consider Statistical Data

With the reconvening of the Presidential Coal Commission's hearing on Jan. 27, the more important part of the proceeding was reached. Prior to that date all matters heard by the commission were of a preliminary nature. Each side made its claims and the "talk fest" portions of the proceedings were over. Heretofore in coal negotiations, the "talk fest" has constituted the more important part of the procedure with statistics and proofs forming an incidental and incomplete portion of the record. The commission has let it be known that the order is to be reversed at this time. All claims must be substantiated by adequate proof. That the parties to the controversy realize this is indicated by the strenuous efforts that are being made by both the operators and the miners to compile the requisite statistics to back up assertions which have been made.

The miners' representatives have engaged a private statistical bureau and force of accountants to work up their figures. In like manner, the National Coal Association is engaged in compiling the most complete statistics that have ever been gathered by the coal industry. A large plant containing tabulating and punching machines and other statistical paraphernalia have been installed under the direction of C. E. Lesher. Every available bookkeeper in town has been engaged for night and Sunday work. The Washington papers of Sunday, Jan. 25, carried large advertisements of the National Coal Association offering inducements to bookkeepers and accountants to assist in the statistical work in which the association is engaged.

Pressure is being brought on the Coal Commission to set coal prices just as did the Fuel Administration. The Commission shows evidence of not wanting to do this. Many are of the opinion that a continuance of price control at this time is leading to much the same demoralization as accompanied the effort to continue in peace time the war-time control of sugar prices. The Central Coal Committee of the Railroad Administration is still exercising its authority as to distribution. Troubles have been coming thick and fast to that committee during the past two weeks as a result of the wholesale confiscation of coal. During that period weather conditions, so far as transportation is concerned, have been fully as bad as they were in the winter of 1917-1918. As result of these confiscations of fuel it seems probable that the difficulties which followed the carrying out of a similar policy in 1917-1918 by the Fuel Administration will be paralleled by the Central Coal Committee.

Obviously the Coal Commission is considering the entire question as of Nov. 1. While it is not believed that they will attempt to make their award retroactive it is belived that

their policy is such that would permit a finding which will disagree with that of Dr. Garfield as to the 14 per cent advance in wages. Neither the 14 per cent advance nor the 20 per cent offer made by the operators is likely to be given consideration, it is believed.

All Coal Fields To Be Represented

Announcement was made on Jan. 23 by the Coal Commission that, beginning Wednesday, Feb. 4, it will take up an investigation into the "outlying coal fields." Up to this time the inquiry has been confined to the Central Competitive field, involving western Pennsylvania, Ohio, Indiana and Illinois. This phase of the investigation will proceed until Feb. 4.

Between now and Feb. 4, representatives of the operators and the miners will offer statistical data touching upon the various points brought into the controvery by both sides. This data will relate to the scale of wages paid the miners, the number of days worked in the mines, working conditions in the mines, operators' profits and a maze of statistics dealing with differentials and other technical questions, the latter of which have been brought into the inquiry.

In the data to be submitted by the operators, their contention that the 14 per cent advance in wages, which went into effect last month, has almost entirely wiped out the operators' profits, will be emphasized. They will maintain that the miners' wages, before the 14 per cent advance was granted, were entirely adequate to meet the increased cost of living.

Outline of Investigation

Letters were sent out by the Bituminous Coal Commission today to secretaries of operators' associations and miners' representatives throughout the outlying fields, informing them of the purpose of the commission to conduct its investigation into those fields. The commission has fixed this schedule for the appearance of representatives of the outlying operators and miners:

Feb. 4, (Wednesday)	District
Michigan	24
Iowa	13
Kansas	14
Missouri	21
Arkansas, Oklahoma, Texas	21

Feb. 9, (Monday)	District
Colorado	15
Wyoming	22
Montana	27
Washington	10

Feb. 11, (Wednesday)	District
Kentucky-Tennessee	19
Western Kentucky	23
Alabama	20

Feb. 13, (Friday)	District
West Virginia	17
West Virginia	29
Maryland	16
Central Pennsylvania	2

The commission's letter which is signed by Herbert N. Shenton, as executive secretary, says in part:

"You are hereby notified that the hearing of such matters (in controversy between the United Mine Workers of America and the operators having joint relations with them) will begin at 9:30 a.m. in the Assembly Room, American Red Cross Building, Washington, and that you and your official colleagues will be heard, and that you should come prepared to present your position.

"In order that the work of the commission may be completed within the time limit of sixty days suggested in the President's memorandum of Dec. 6, 1919, it is necessary that the question should be reduced to the minimum, and the commission hopes that the operators and the mine workers' scale committees, representing the districts in question, will endeavor to agree upon a statement of particular matters to be submitted to the commission and that no unnecessary subjects be included."

Anthracite Parley Opens Feb. 15

Officials of the United Mine Workers announced at Hazelton, Pa., on Jan. 28 that conferences probably will start with the anthracite coal operators the week of Feb. 15, either in Philadelphia or New York. A new agreement will be negotiated. The present contracts expire March 31.

Strike for Restoration of Checkoff

On Saturday morning, Jan. 24, all the mine workers at one of the mines of the New River Co., the largest company in the New River field, laid down their tools and went on strike demanding that the check-off and "closed-shop" abrogated by them when they went on strike on Nov. 1 be restored. Their action was taken in the face of the fact that the whole check-off matter is now in the hands of the Bituminous Coal Commission and that a temporary restraining order is still in effect.

Operators are rather curious to see just what action the Department of Justice will take to force a compliance with the Indianapolis agreement. On Monday, Jan. 26, the strike had spread to another operation of the same company. When the matter was brought to the attention of J. R. Gilmore, president of District 29, of the United Mine Workers of America, he said he had no knowledge of the strike but would take steps to get the miners back to work.

The strike of the mine workers of the New River Co. at its Cranberry operations and of the Elkhorn Piney Mining Co. at its Stanaford operation, on Thursday, Jan. 29, had not only not been settled but had spread throughout nearly the entire New River field, the miners demanding the restoration of the check-off. The only operations not affected were those of the New River Collieries Co. and the New River and Pocahontas Consolidated Coal & Coke Co., where, it is said, the companies have agreed to reestablish the check-off and the closed shop. Further trouble was also feared at the mines of the Willis Branch Coal Co., where on Jan. 20 working miners were attacked by strikers and some of the party of workers badly injured. The temporary restraining order enjoining the miners from striking is still in effect, but is being disobeyed by the miners. It had been anticipated at first that the officers of District 29 would be able to induce the strikers to return to work, but the situation seems now to have gone beyond their control.

Van Bittner Makes Large Demands

Voluminous statistical material was presented to the President's Coal Commission by the representatives of the miners at the hearings on Jan. 27 and Jan. 28. An extended argument in connection with the figures was made by Van Bittner.

Exhibit No. 1, presented by Mr. Bittner, gave figures with regard to the increase in living costs 1914-1920. Mr. Bittner placed important stress on the living-cost figures. The operators announced that they would pay little attention to statistics on living costs because figures covering this subject are available to the commission from Government sources. Mr. Bittner drew the following conclusions from his tabulations:

1. The cost of living in coal-mining towns as a group did not increase as rapidly as in the highest stimulated shipbuilding and munition centers, where the increase was about 90 per cent.

2. In all probability the increase in the mining towns was more analagous to the average for the country after the exclusion of the ship-building centers—namely 80 per cent.

3. In the absence of precise information to support the probability just mentioned the only practical assumption is that the increase of mining towns has been about the same as for the country as a whole—namely 85 per cent.

"It is our belief," declared Mr. Bittner, "based on our experience and the data which we have collected that the cost of living in mining towns has increased to a greater extent than in other industrial towns." Pending further investigation, however, we are accepting for the purpose of this discussion that the advance in living cost during the period 1914-1920 has been practically the same in mining communities as in other localities. The following list of Mr. Bittner's subject-heads gives a good idea of the trend of his argument:

No hope of prices declining; a wage increase corresponding to the increased cost of living is unacceptable;

the old theory of wages; the present theory of wages; the principles of the National War Labor Board; labor guarantees of the peace treaty; fundamental justice and general sanction of the living wage; bituminous mine workers have not received and are not at present receiving living wage; an adequate standard of living prior to the war; inadequacy of pre-war rates of pay and earnings of bituminous coal miners; the inadequacy of increased rates of compensation granted during the war; present rates of pay are even more inadequate than pre-war rates; definition of a living wage; cost of the minimum of subsistence; a minimum standard of health and reasonable comfort; relation of increased wage payments to total cost of production, profits, and prices; relation of wage advances to total costs, prices, and profits; relationship between labor and production; operators' profit; operators have not absorbed the 14 per cent advance in wages; irregularity in operation and employment.

Dr. Garfield's analysis: increases in compensation to mine workers as compared with wage increases in other industries during the war; punitive overtime; overtime building of National War Labor Board; overtime by law; overtime under minimum wage legislation; overtime in foreign labor legislation; occupational hazard of bituminous coal miners; present rates of pay are not adequate even under regular working conditions to yield a living wage; the six-hour day in England; company housing in the bituminous coal region; payroll on a uniform basis.

Emphasis Placed on a Family Budget

Mr. Bittner placed great emphasis on a family budget prepared for the miner workers by Professor Ogburn of Columbia University. A summary of the budget is as follows:

1.	Food		$801.38
2.	Clothing:		
	Husband	$146.81	
	Wife	130.92	
	Boy (11 years)	77.40	
	Girl (5 years)	66.13	
	Boy (2 years)	34.00	
			455.26
3.	Housing, fuel and light		286.00
4.	Miscellaneous		576.30
	Total		$2,118.94
	Average saving on garden and chickens		15.00
			$2,103.94
	Explosives, smithing, etc		140.00
	Total		$2,243.94

Great stress was laid upon operators' profits by Mr. Bittner. "The causes of increased prices to the consumer," he declared, "are not to be found in added labor cost growing out of the wage advances allowed the miners but in the excessive profit of the coal operators and the wholesale and retail coal dealers." Mr. Bittner used Federal Trade Commission figures to back up his assertion that "the distributive share of labor actually decreased from 66 cents in 1916 to 55 cents in 1918, or 16.7 per cent, while the distributive share of the operator increased during the same period from 6c. to 25c. or 316.7 per cent. This was used to show a diminishing share of labor in the division of each dollar paid for coal.

Mr. Bittner made frequent use of Senate Document 259 which is a compilation by the Treasury Department of the incomes of corporations. From that report he pointed out that 335 companies made a profit of 15 per cent; 311 made a profit of 20 per cent; 295 made a profit of 25 per cent; 270 made a profit of 30 per cent; 232 made a profit of 40 per cent; 197 made a profit of 50 per cent; 105 made a profit of 100 per cent; and 8 companies made a profit of over 1,000 per cent in 1917.

Mr. Penna at the hearing on Jan. 28 introduced several affidavits denying charges by representatives of the mine workers that certain operators in Indiana had permitted without docking the loading of impurities with the coal.

At the Wednesday hearing the operators explained that they had a very large force, working night and day, compiling the data which the operators wished to introduce but that it would not be ready until Monday.

It very evidently is the intent of the commission to make its award within the time limit specified by the President. In that case the findings of the commission will be available by March 15. The impression is very general that the commission will not make any retroactive application of its findings.

Nova Scotia Miners Enraged

A 14 per cent increase does not satisfy the mine workers of Nova Scotia even when accompanied by an adjustment to accord with changed living costs made three times a year. They do not like the decision of the McKinnon Arbitration Board that settled the wage dispute between the Dominion Coal Co. and its employees. The members of the Caledonia and Phalen locals have referred the decision back to the executives of the United Mine Workers of America.

In some labor quarters there is a disposition to try to delay any decision in Nova Scotia until the Bituminous Coal Commission has rendered its verdict. James B. MacLachlan, the secretary-treasurer of the Nova Scotia District No. 26, is today quite an unpopular man. Until the present moment no one could speak too highly of him.

Alabama's Labor Difficulties

Attorney General Palmer recently telegraphed to the Alabama coal operators asking them to appoint six men to meet six appointees of the mine workers, and adjust the difficulties existing regarding the re-employment of those men, said to be about a thousand in number, who are alleged to have been dropped because they gave leading co-operation in the recent nation-wide strike. The umpire was to be appointed by Judge W. J. Grubb.

The operators have refused to nominate the six men to look after their interests, saying that they have no difficulty to settle, and that the Alabama Coal Operators' Association has no authority, as an association, to deal with labor. They add that during the week ended Jan. 13 the mines produced 400,000 tons, which is a record production. The men they have refused to employ are professional "agitators" and "trouble makers."

The operators say that these men made trouble during the war and by discharging them they are automatically rewarding those who during the war stood by the nation and increased the Alabama record for production per man. They declare they have no sympathy with the union men who in the recent strike broke their contract inexcusably.

Promises Made Only To Be Broken

Resolutions have been adopted by a number of the locals in District 29, United Mine Workers, demanding a restoration of the check-off, these resolutions having been submitted to the Bituminous Coal Commission. In each of the resolutions so adopted the miners pledge themselves to abide by their contract, but inasmuch as they broke their contract when the first opportunity presented itself, operators generally regard the miners' pledge to stand by their contract as worthless. It is significant that in all the resolutions adopted no reference is made to the fact that the contract has already been broken.

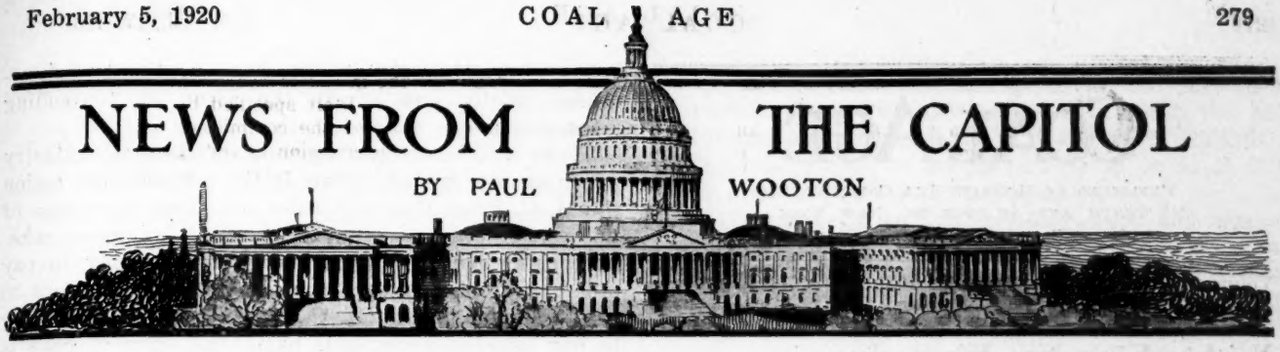
Everyone Knows Monday Is a Holiday

It was only because Monday—"Blue Monday"—is quite often observed as a holiday by mine workers that the Kansas men laid off on Jan. 26. They "just didn't feel like working." The Sunday quiet had settled over their souls and they felt the appeal of home with its coal stove and hot meals. It was no "conspiracy," they explained.

They did not quit work to protest against the Industrial Court Law or any other law, federal or state. Days of indolence in Kansas are institutions quite generally observed, especially after a big Saturday's "pay."

NEWS FROM THE CAPITOL

BY PAUL WOOTON



Railroads Refuse to Pay for Diverted Coal

The following wire has just been received by C. S. Allen, secretary Wholesale Coal Trade Association, from Mr. Cushing of Washington, D. C., on Jan. 27, 1920, of the American Wholesale Coal Association:

"In the conference with the Coal Committee and Railroad Administration yesterday evening they refused to pay for diverted coal other than on basis of Phillippe's letter of Dec. 6, to promise any relief from diversions, to waive the right of the railroads to supply themselves by diverting coal or to join us in a request to the President to either lift price restrictions or in any other way to bring relief.

"They virtually told us they were looking out for their own interests and suggested that we do the same. Judge Elliott appealed to the Director-General without hope for relief. A suit apparently is our only recourse and you may expect to hear of an injunction at once."

Operators' Profits Discussed in the Senate

Senator Harris, of Georgia, is continuing his efforts to have the tax returns of the coal operators thrown open to the public. The discussion in the Senate on Jan. 21 was particularly to the point.

A motion was agreed to, and the Senate proceeded to consider the resolution which proposes to direct the Secretary of the Treasury to furnish the Senate certain detailed information secured from income and profits tax returns of the taxable year 1918 as to relative incomes of all corporations engaged in mining coal.

An amendment to the resolution reads as follows:

Be it further resolved, That the Secretary of the Treasury be, and he hereby is, directed to furnish the Senate, from the income-tax returns for the taxable year 1918, a list of all miners and mine workers employed at lignite and bituminous-coal mines, together with the gross income of each of said miners and mine workers, the income tax paid by them and each of them, and the net income of the same.

After much other discussion Mr. Frelinghuysen made the following speech in the Senate: "Mr. President, if I am in order, I should like to say to the Senator from Georgia that at the present time there is a Senate committee investigating the coal question, and they intend to procure from the operators themselves, from their books, the profits that they are making.

I desire, further, to say that the committee also intend to procure information regarding the wages that are now being paid. I have no sypmpathy with any coal operator who is making an unfair profit, but I seriously object to the effort that is now being made to raise the miners' wages 14 per cent and give publicity to the fact that that 14 per cent will be taken out of the operators, when it will not. When that 14 per cent is to be imposed on the consumer, as it has been in my State, increasing the expense to the public service corporations $500,000 in the cost of their coal and indirectly increasing the cost to the consumer, it is time to call a halt.

The motive of the resolution, which, I strongly suspect, is to show that the operators are making an unusual profit in order that a still further advance may be made in the miners' wages and that it can then be imposed upon the operators, which is not possible under the contracts that prevail now between the operators and the large consumers of coal.

For that reason I offered my amendment to show that the miners of the country are now earning a wage far beyond what skilled workmen in other employments are making. I want the whole question shown up, if the committee are not to be intrusted with the further duty of procuring the information."

Blocked in his efforts to have the Commissioner of Internal Revenue make public the profits of the coal operators, Senator Harris has introduced a joint resolution providing that the Secretary of the Treasury be directed to furnish the Senate the following information from the 1918 income and profits tax returns: Capital stock; invested capital; net income; tax income; excess profits; per cent of total tax to net income; net income after deducting tax; per cent of net income to capital stock; per cent of net income to invested capital; per cent of net income after deducting tax; to capital stock; per cent of net income after deducting tax, to invested capital; capital stock 1917; net income 1917; per cent of net income to capital stock 1917; excess of the per cent of net income to capital stock for 1918 above the percentage for 1917.

It is stated at the National Coal Association that the Senate and the general public is to be furnished with the exact truth of the earnings of coal operators. These figures are now being compiled and will be given to the public unreservedly.

Anthracite Report Made Public

The Federal Trade Commission's report on the cost of producing anthracite coal in Pennsylvania was made public on Jan. 14. According to the report the total f.o.b. mine cost of fresh-mined coal increased 82 per cent (from $2.66 to $4.84 per gross ton) from the first of 1917 to the end of 1918. The sales realization increased 58 per cent (from $3.29 to $5.20 per gross ton). Margin decreased 43 per cent (from 63 to 36c. per gross ton. The report presents in detail statistics showing separately the results of the group of railroad coal companies, and of independent operators.

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Neither King Nor Kingmaker

IN THE bituminous-coal industry it is often asserted that there is no leader—no king nor kingmaker. Many have regretted that there is no one in the coal industry to fill the great rôle of Judge Gary in the steel trade. That there is none is undoubtedly true and, in consequence, there are divided councils, and the operators back and fill. Now they will, now they won't.

The operators are not organized. Hastily, whenever there is a contract to be made, an organization, as loose as it is temporary, is formed. Individual expression is not suppressed or discouraged, and the vote varies, as it does in Congress and in our state legislative halls. Now the extremists and now the conservatives carry the day. At one time the high-price mines compel attention to their needs and at another time the well-established mines overrule the weak, and compromise is apt to be the order of that brief day. Those whose fortunes are imperiled will rally and then a new policy seems favored. At such time the needs of certain hardly beset regions are again considered and a somewhat different plan follows. After all there is s o m e t h i n g exceedingly democratic and American about the clash of interests and of views, and the public is quite disposed to be favorably impressed by the fact that there is neither king nor kingmaker in the whole aggregation.

The mine workers may enforce a certain amount of regularity in their ranks, for is not one, John L. Lewis, the duly elected heretoga of their tribes? Still Howat clashes with Lewis, and Green with Farrington, and all is not peace. There is a chance for each to lead if only a following large enough can be secured.

No one can foretell, either among operators or men, who will lead, for a Homeric battle for leadership is waged in the union and another quieter but not less Homeric battle for principles rather than leaders is fought among the operators.

No outstanding figure among 500 loosely knit operators can be found. No one in the ranks of these mine owners has such mastery as has Judge Gary in the steel industry. It must be remembered that Gary represents, and in a degree controls, nearly half the national output of steel. While not underrating the titanic skill and courage of that steelmaster, one cannot forget that it is not so much these qualities as the output of the United States Steel Corporation that determines quietly and surely the issue of contending interests.

There are, however, fragments of the coal industry which are dominated. Thus in the Connellsville region the H. C. Frick Coke Co. rules not alone by reason of its wonderful output but because of its great coke-purchasing power. What wages it is willing to pay others are obliged to pay and feel they can afford to pay. Besides, as the H. C. Frick Coke Co. is willing to buy coke on a cost-plus basis, the price of coke is almost sure to follow the cost of coal production.

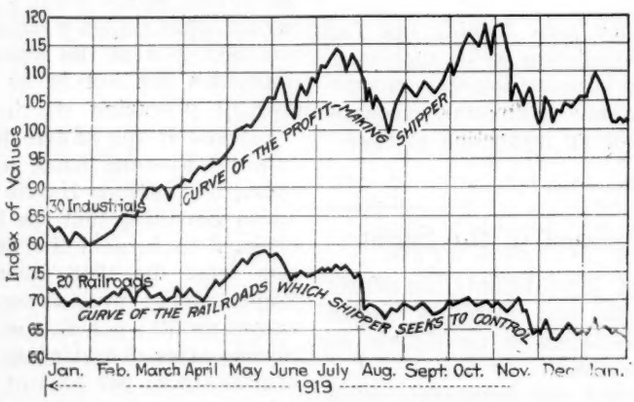
The coke company mentioned never hesitates to meet the increased wage with a similar increase in its coke price. Hence it is that when it posts a new wage, always somewhat higher than the last, every coke company, however small or large, posts, on the following day, the same scale, and the leadership of the H. C. Frick Coke Co. is never questioned. Nor is it feared, for its dealings are as fair as they are generous.

But the mines in the Connellsville region are non-union and therefore the H. C. Frick Coke Co., not entering the union operators' counsels, has no power to control in union-mine affairs. The Connellsville region has its own little millpond. It has little immediate competition and it stands alone, without much influence in national coal counsels but a unit in its own. As this regards the bituminous operators only, nothing need be said of the anthracite operators with their almost complete organization. They have little direct influence on the bituminous operators but follow along behind, fixing their scale revisions, however, with some reference to the concessions already given by the coal-mine operators of the bituminous region. There is no head in bituminous mine affairs. T. T. Brewster, chairman of the Scale Committee in the present dispute, is respected, not for his economic power, for that he does not possess, but for personal qualities and for individual magnetism. He is beloved, but he cannot order. He is the mouthpiece of the operators, not their master. They will have none. The public, perhaps, respects—it certainly should—the operators for their intensely human, markedly American characteristics.

As for Mr. Brewster, he is not a big-output operator; perhaps the mine owners would not accept him if he were; but, because he represents a section of Illinois that has much at issue, and because his is a good American type and he is a safe man to have in his present position, they have let him hold the post of prominence that the productive volume of his mines would not indicate.

The mine operators do not have a master. It is a safe guess to declare that they never will. Something of the conflict ever incident to democracy will always afflict yet defend them when in council.

Pity the Poor Shipper



The value of 30 industrial stocks, according to this chart adopted from the New York *Tribune*, has risen in the last year from 85 to 102. Meanwhile the value of 20 railroad stocks has fallen from 72 to 64. Yet the industrial concerns—the shippers—claim that they cannot afford to do the railroads justice

Putting Business Into Engineering Students

AFTER a loud cry went out that engineering students did not have any business ability, it was decided by many of the college faculties that the desideratum could be supplied by teaching mine accounting and allied subjects. Doubtless these subjects will be useful, for accounting is an extremely valuable accomplishment, yet the big certified accountants are seldom placed in charge of affairs and never in control of big business.

Rarely is a good accountant a first-class executive, and rarely is a good historian a leading statesman. A knowledge of accounting is a valuable asset but what students need on leaving college is a quality of manhood. They usually and quite naturally lack all the rounding influence of affairs. Some may emphasize the lack of manners, others the need for the quality of concentration, some may deplore most the absence of a power for sustained effort in the newly arrived student, but these matters are one and all needed. Working one's way through college will supply many of the qualities desired. Work before entering will supply them also, while careful selection before entry will assure that the student will have qualities that no training can ever supply.

One of the leading troubles with some students is that they do not want to fill the specifications for a valuable employee. They resent being cast into a utilitarian mold. They dislike the acquirement of manners, concentration and effort. They regard these as mere servilities and go to college with the hope that they may vault over the heads of others and escape what they claim are menial occupations. Engineering to them is visualized as riding around in a high-powered automobile and issuing orders. If the prexy cannot promise them at least an approximation to such a vault into the saddle they are not satisfied.

THE CLOTHES OF 1914 NO LONGER FIT YOUR UNCLE SAMUEL

Middle Class Union

PROSPEROUS indeed seems the Middle Class Union of Great Britain. It practically is an organization of the ununionized, for it declares itself, with apologies for its name, as an association of those who are neither members of manual unions nor members of the employing class.

There are dangers in such a union. The founders of it recognize that fact and so apparently do the members. They are not declaring their belief that what are commonly regarded as intellectual pursuits should be better paid than manual tasks. All they assert is that the manual workers should not be allowed by combination to make the toilers at the desk, and in the office pay them larger wages than supply and demand would indicate.

They are opposed to any persons arraying themselves in financial battle against others who refrain from such action. They are not seeking to fight for themselves but to repel those who would fight against them. They are against extortion and greed on the part of any persons, who combine themselves against the public interest and so are able to make living difficult for the middle class or would be able to do so if it had no organization for self protection.

It is a negative and unselfish creed and weak for that reason. But after all "Defense" is a good rallying cry and appeals strongly to the best men everywhere. The new union needs watching, of course. It may at any time develop aggressive tendencies. It may in an unguarded moment vote itself into favoring desk- as against bench-work as the more worthy and therefore entitled to the higher award. But the action and success of the Middle Class Union in combating the British transport strike is an evidence of its value when properly directed.

Many members of Parliament have entered its ranks. It immediately obtained political power. If it goes on as it has commenced it will be a wholesome factor in public life, a rallying point for those who believe that the co-operative bargain may be, and often is, a labor-trust weapon every bit as dangerous as the gentlemen's agreement or capital trust.

The faults of the bourgeois are matters not to be denied but on the whole the bourgeois tries to be fair, to live and let live. May the Middle Class Union exemplify the boast that the middle class is one of the bulwarks of the nation.

Still, there are clouds which threaten rain. The labor unions are catering already to this new union—the salariat as it is called in opposition to the proletariat. A meeting is to be held to determine on what is to be the relation between the two classes of employees. So far the Middle Class Union has stood for sanity. It has opposed those unions which by mass action tried to carry everything before them regardless of the national welfare, or which sought ends not based in any way on the necessities which readjustment visited on them. If it continues fair and courageous it will deserve well of the public. If it sinks into the slough of union politics it will lose its membership and its present ability to act as the balance weight of the state.

Let's Go!

THE AMERICAN Institute of Mining and Metallurgical Engineers announces a fuels conference which strikes a new note in the coal business. The stabilization of the coal industry is one of our ambitions, of course, and here seems to be a most promising effort toward this end.

A program backed by this association, which does things, and led by a man of the high standing and clear vision of Dr. Van H. Manning, Director of the Bureau of Mines, would at any time command our attention. Just now it is particularly timely.

If the coal business is to have a hand in recommending the means to this desirable end, the coal operator should attend ready to participate in this discussion and we are assured that the coal man will be welcome.

DISCUSSION *by* READERS

EDITED BY JAMES T. BEARD

Electric Mine Haulage

Letter No. 5—It will not be surprising if this discussion brings out the fact that there are many mines experiencing the same difficulty as that to which attention is drawn by Charles F. Sherman, COAL AGE, Nov. 27, p. 861; namely, the tendency of electric locomotives to tilt or lift the front end of the locomotive frame when starting, or when pulling a loaded trip up a heavy grade.

This is especially observable in the use of a six-ton motor that is overloaded or nearly so. This tendency of the front end of the frame to rise, unquestionably, throws the burden of the load on the controller-end armature, which results in its overheating and causing other armature troubles, while the resistance-end armature is practically free from these troubles.

In my practice, I have seen and used a number of General Electric, six-ton locomotives; and, in my opinion, it would be difficult to throw most of the weight on the front end by reversing the machine, or turning it end-for-end. Even taking the controller and the operator into account as a factor in the weight, the bulk of the frame weight would still be on the resistance end.

The locomotives I have seen are apparently designed so that most of the weight is on the resistance or front end. Still, when these motors have very much of a load the front end of the frame will lift. The question of equalizing the load and work of the two armatures appears to me to be an important feature that is much overlooked in the design and manufacture of these machines.

MANUFACTURERS' ESTIMATE OF HAULING CAPACITY

According to statistics compiled by different manufacturers of mine locomotives, relative to their hauling capacity when operating on clean, dry, sanded rails, a six-ton locomotive equipped with steel-tired wheels, will start a load of 127 tons, on a level track, with a frictional resistance of 30 lb. per ton; or 30-ton load, on a four per cent grade. The hauling capacity of the same machine when running is 94 tons, on a level track, or 24 tons on a four per cent grade.

As grades, generally, in well engineered mines, are in favor of the loads, the overloading of mine locomotives is well safeguarded; and, theoretically, we should be able to push a large number of empty cars, say ten or twelve, up a five or six per cent grade. I have seen this number of empty cars, weighing about a ton each, handled in this manner, with the best results, where the tendency of the front end of the locomotive to lift was minimized.

At times, it was even necessary to place a band over the bumper, above and below the coupling pocket of the locomotive, in order that the locomotive frame would not ride the bumpers of the mine cars when starting to push a trip.

The practice of pushing the load ahead of the locomotive appears to me to minimize the evil effect of throwing all the load on the controller-end motor. It is not possible, in all mine conditions, to do this; but, as a six-ton locomotive is primarily a gathering locomotive, it is always possible not to overload them, if the haulages, side tracks, layoffs, etc., are provided at suitable points in the mine.

However, until a different idea of construction and design enters into the manufacture of the locomotives, it will not be possible to fully eliminate the armature troubles in the controller end of double-armature locomotives, by reason of the tendency of the front end of the frame to lift under a heavy load. Such a load does not necessarily mean more than that allowed by the manufacturers' tables.

It does not seem practicable that a locomotive can be built, for general use, to overcome this widely recognized difficulty; nor does it seem practicable, especially on a General Electric, six-ton gathering locomotive, that more frame weight can be employed than that already provided, without tilting or raising the rear end of the locomotive. An armature of greater horsepower might be used to advantage in the controller end to take care of the added work required. Like the editor and Mr. Sherman, I would be glad to hear from others on this subject.

Thomas, W. Va. W. H. NOONE.

Guarantee of Mining Equipment

Letter No. 1—In the issue of *Coal Age*, Jan. 8, p. 63, there appeared an inquiry regarding the guarantee of the performance of mine fans, by the manufacturer of such equipment, and I was pleased to read the inquiry and reply.

The subject of the guarantee made by the manufacturer to the purchaser of any equipment has always been one that has interested me, and I have often wondered how such guarantees worked out. We are all familiar with the guarantee of automobile tiremakers who specify a certain mileage for their tires. But the guarantee practice in many lines of manufacture seems to be going out to a considerable extent. I believe this is particularly true in coal mining.

The man who takes good care of his tires is made to pay, on his bill, some of the replacement cost of the man who abuses his. The same is true, I think, of any kind of equipment. It is understood that, in purchasing equipment, reasonable care will be taken or is expected to be taken when that equipment is installed and used.

It has been my experience that the guarantee, nowadays, does not cut much ice, though perhaps in a few cases a written guarantee all "dolled up" on a paper that does not look unlike an oil-stock certificate, does play its part in the sale of the equipment.

I have heard it said that a product that is good enough to be guaranteed generally least needs a guarantee to sell it. No amount of word decorating can, in my opinion, add to the recognized quality of an article. The service record of any equipment indicates, beyond the shadow of a doubt, that if the same care in installation is used in the future, as in the past, there is no call for a written promise or guarantee.

What a Manufacturer's Guarantee of Mine Equipment Means

A guarantee does not and should not mean that the customer will get five years of care-free service; but it does mean that should the equipment give trouble it will be repaired or replaced, as far as the equipment is concerned, by the manufacturer.

But the buyer of equipment will do well to remember that the time and labor lost while the manufacturer is making good cannot be reckoned exactly. The concern giving such a guarantee figures the probable amount of defective material that will have to be replaced, and includes the cost of this extra material and labor in the original price of the equipment. How bad must a piece of equipment become, may I ask, before it is unserviceable?

The best possible kind of guarantee that a purchaser can get is the good-faith guarantee of a reliable company. He knows the company is not in business for this year only and that, unless its product is dependable and delivers the proper service, the active life of the company is indeed limited. L. S. Youngling.

Pittsburgh, Pa.

Authority of Shotfirers

Letter No. 1—The question raised by "Shotfirer," *Coal Age*, Jan. 1, p. 26, is one of paramount importance wherever coal is blasted by the use of explosives of any kind. In one Iowa mine, there have been three premature explosions of black powder, caused by ignition from a spark when the loose powder was being worked to the back of the hole with an iron scraper. The results are three men dead and one made almost totally blind by flying coal.

The inestimable services rendered by shotfirers are often either too lightly esteemed, or estimated by their assumed worth in cold cash. In support of this statement I would like to give some facts that may prove beneficial to the many readers of *Coal Age*.

Following a disastrous dust explosion that occurred in an Iowa mine in 1914 and which completely wrecked the mine causing its permanent abandonment; the mine inspection department realizing that something must be done to eliminate, if possible, the recurrence of such accidents, formulated a set of rules, revoked all the certificates previously granted to shotfirers and compelled them to come in person and subscribe to, and thenceforth rigidly observe the following rules:

1. To prohibit the charging and firing of all shots that are drilled into the solid.
2. To prohibit the charging and firing of one shot following another, and depending upon the success of the first shot; unless, the dependent shot cannot be fired until the first shot is known to have done its work properly. (This rule included all sumpers.)
3. To prohibit the charging and firing of any shot that has blown out the tamping, or, any shot that is placed too near old holes, cracks or fissures made by previous shots.
4. To prohibit the charging and firing of more than three coal shots in rooms or pillars; or more than two coal shots in entries or rooms turning. Provided further, that when making breakthroughs in entries the entrymen be allowed one extra coal shot or a total of three coal shots in entry and breakthrough.
5. To not knowingly approve or fire any shot that is charged with mixed explosives of any kind.
6. To not knowingly approve or fire any shot that is not firmly and sufficiently tamped with lawful tamping. (In Iowa, sand, soil or clay.)
7. To prohibit the charging and firing of shots in those parts of the mine where Sections 34 and 35 of the State Mining Laws of Iowa are faithfully observed. (These sections apply to the lawful tamping of shots and the sprinkling of dusty roads.)
8. To observe the time (to be mutually agreed upon hereafter) to commence the firing of shots in the mine where I am employed as shotfirer, which in no case shall commence until every person (except the shotfirers) are out of the mine.
9. To devote ample time to the examining of shots and their surroundings. To make sure that conditions are reasonably safe in the firing zone to light shots; and to light them no faster than safe practice will permit.
10. To prohibit the charging and firing of any shot where explosives are stored or kept in the mine, either by operator or miner, in violation of Section 2, Chapter 130, of the Iowa State Mining Laws.

In addition to these rules we have since requested that in mines where shotfirers are employed there must be the following provision made for them, the first winter the mine is opened:

A place of refuge shall be made for the shotfirers in the solid coal with a heavy door so arranged that it can be securely barred from the inside. The shotfirers must only light a few shots at a time, then retreat to the place of refuge, close and fasten the door and remain inside until all the shots that were lighted have gone off. This is to be repeated until all the shots in the mine are fired.

This ruling has saved lives on different occasions. The following data, compiled before and after these rules were made obligatory, will prove their sterling value in preventing casualties to shotfirers: From January 1, 1902, to December 31, 1913, inclusive there were 23 shotfirers killed, and these casualties may be classified as follows: From explosions or blownout shots, 13; from flying coal, 8; from falls of roof, 2. On the other hand, since the rules went into effect in May, 1914, until December 31, 1919, there have occurred only two deaths of shotfirers, one by a windy shot and one by flying coal.

The Iowa State Mining Law gives the shotfirer the authority to protect himself by allowing him "to prohibit the charging and firing of any shot which in his judgment is unsafe." And if this right is in any way abridged or abrogated, I want to ask, where is the shotfirer's protection?

Firm Character of a True Fireboss

I believe that above everything else the shotfirer should be a thoroughly practical, careful and reliable man and have enough moral stamina to execute his duties without fear or favor. He should strenuously resist any encroachment upon his judgment in determining the practicability of shots.

Eternal vigilance will be absolutely necessary as a part of the shotfirer's equipment, as each day brings dangers and difficulties of such magnitude and intricacy that make their safe solution, at all times, an exceedingly difficult problem. In dealing with these he will often be compelled to rely largely on his own practical experience and prudence.

However, the shotfirer should, under all circumstances, give himself (and thereby those dependent on him) the benefit of the doubt, and require as large a margin of safety in all things as it is possible to exact from everyone employed in and around the mine. It will be better for a shotfirer to be a living monument to the courage of his convictions, than to become a corpse

as the result of the mistaken or misapplied judgment of some one else.

In closing allow me to state my conclusion of the whole matter by saying, that whenever a shotfirer is denied the absolute and inalienable right to exercise his practical judgment, for his own personal protection and safety, under any and all circumstances (the committee and others with their views and opinions to the contrary notwithstanding), he is thereby stripped of all qualifications and ambition, loses his identity as a rational intelligent being and simply becomes a traveling target worth only whatever unscrupulous men are willing to pay for such perfunctory services.

W. E. HOLLAND,
Albia, Iowa. State Mine Inspector.

Analysis of Mine Water

Letter No. 1—In the issue of *Coal Age*, Sept. 11, p. 434, Donald J. Baker, discussing the drainage problem of the Edna No. 2 mine, of the Hillman Coal & Coke Co., Wendel, Penn., gives what he says is the result of a recent analysis of the mine water, the several ingredients being expressed as contained in 100,000 parts of the water.

Mr. Baker then states the quantities of "lime (90 per cent) and soda ash (95 per cent)" required, per 1000 gal., in treatment of this water for boiler use:

There is already a great deal of misunderstanding or ignorance, among practical mining men, as to just what mine water is; and the analysis presented by Mr. Baker, which is a very strange one to say the least, does not help to improve this condition but rather makes matters worse.

In the first place, it is quite unusual to calculate the "free acid as sulphur," in giving the results of a chemical analysis of water. This is a small matter, however, as compared with the more important fact that this analysis would make it appear that the water contains not only a high percentage of free acid and acid salt (iron sulphate and aluminum sulphate), but a considerable quantity of calcium carbonate and some magnesium carbonate besides.

IMPORTANCE OF CORRECT CHEMICAL ANALYSIS

A chemist, of course, would recognize at a glance that the analysis as given must be incorrect; but the practical mining man, not having the same knowledge of the relation of chemical ingredients, would be misled as to the actual condition of the water he must handle in draining the mine, or its effect if used in the boilers for the production of steam.

Inasmuch as Mr. Baker states that this water is corrosive in its action, and the analysis given shows a high acid content and considerable calcium carbonate, which is a substance more or less opposite in its nature to an acid, it would be interesting to have an explanation of the analysis he gives. In other words, let me ask, How can a water contain both free acid and calcium carbonate, since these two ingredients would neutralize each other and result in the formation of a calcium salt (calcium sulphate).

Judging, as best one can, from the analysis given, it would appear difficult to treat this water in a way that would make it suitable for boiler use. It will be of interest to learn just how the proportionate amounts of the reagents (lime and soda ash), which he gives as being required to treat this water, were calculated. It will be further interesting to *Coal Age* readers to know just what results were obtained in the use of this water in steam boilers.

A. G. BLAKELEY, Chief Chemist,
Philadelphia & Reading Coal & Iron Co.
Pottsville, Penn.

Finding a Mine Door Set Open

Letter No. 19—The question in regard to how a fireboss should proceed in his examination of a mine or section, after finding a door standing open and not knowing how long it has been open has caused considerable argument, some of the writers claiming that the safest course to pursue is to leave the door as it was found, while others claim that there would be less danger in closing the door and proceeding to make the examination with caution, taking it for granted that nothing is wrong in the section.

There seems to be much difference of opinion also in regard to starting the examination on the intake end and following the air current, or beginning at the return end and proceeding against the air.

These are important questions in firebossing. My own preference is to close the door and give time for the circulation to be restored in the section. In any well-managed mine where shots are fired at night or after the men have left the mine, there are firerunners employed to see that no feeders have been ignited by the shots. In smaller mines where the miners fire their own shots, the law usually requires every man to examine his place to see that no gas is burning.

The fireboss is warranted in assuming that there is no gas feeder burning in his section. Anything else would point to bad management in the operation of the mine. My opinion, therefore, is that he should close the door and wait a sufficient time for the circulation to be restored in the section and then proceed with the examination. It is not to be supposed that, finding gas in the first one or two rooms, a fireboss would attempt to go further, as he would be sure to get into trouble before he had proceeded far. If the workings are advancing to the rise he would expect to find more and more gas as he proceeds. If he has not closed the door before he would now be compelled to go back and close the door.

Again, it is reasonable to suppose that even with the door standing open there would be sufficient air circulating at the face of the rooms to carry the gas forward. In that case, had there been a feeder burning in the section, the explosion of the gas would have taken place before this. Reasoning thus the fireboss feels more than ever that he is safe in closing the door.

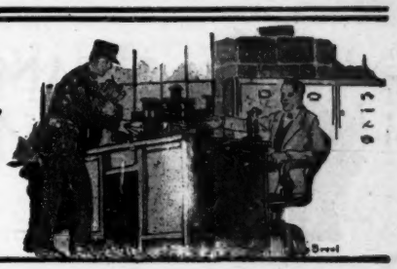
Let me say in closing that a fireboss proceeding to make an examination of a section where the circulation is cut off by an open door is in danger of being overcome with gas. Should that happen, few men would attempt his rescue before closing the door, knowing that they would be overcome quickly, as was the man they tried to rescue. In regard to starting an examination of a section at the return end, it is my firm conviction that such a course is pure foolishness and I can not conceive of a trained fireboss doing such a trick.

Mohrland, Utah. ALEX HARRISON.

[The discussion "Finding a Mine Door Set Open" will close with letter No. 20, now on hand.—EDITOR.]

INQUIRIES OF GENERAL INTEREST

ANSWERED BY JAMES T. BEARD



Roof Falls in Airways

We have been troubled, of late, with an insufficient supply of air in the mine workings, which is thought to be the result of numerous falls in the main air-course. The expense of clearing up this air-course will be considerable, and we are led to ask what effect it will have in reducing the power required for the ventilation of the mine.

For example, assume an airway 6 x 12 ft. in section, and 5,000 ft. long, passing, say, 35,000 cu.ft. of air per minute, under a 2-in. water gage, and suppose that the main airway is partly blocked by falls, for a distance of 1,000 ft., so that its cross-section is reduced to an average of 4 x 12 ft., while, in a few places, the section may not measure more than 3 x 10 ft. My question is, What percentage of power will be saved by clearing up the 1,000 ft. of this airway, so as to restore the original circulation.

MINE MANAGER.

Centralia, Ill.

Without more specific data it is impossible to give more than an approximate estimate of the result of the roof falls in this air-course as affecting the general circulation of air in the mine.

It is stated that the sectional area of the airway has been reduced to an average of $4 \times 12 = 48$ sq. ft., the original area being $6 \times 12 = 72$ sq.ft. It is further stated that the area, in places, may not exceed $3 \times 10 = 30$ sq.ft.

We will first assume that the power producing the circulation, in the fallen state of the air-course, is the same as what was required to pass the original volume of air before the roof started to fall. Then, taking the length of the original airway as 5,000 ft., including the return, and assuming 1,000 ft. of the air-course is partly blocked with falls as stated, there remains 4,000 ft. of airway having the original cross-section.

Now, in order to calculate the amount the circulation is reduced, the power on the air remaining constant, it is necessary to calculate the relative, part potentials, first, of the original 5,000 ft. of airway and return, and then of the 1,000 ft. of the blocked return air-course and the remaining 4,000 ft. of airway and return having the full sectional area undisturbed.

The lengths of these three sections being 5,000, 1,000 and 4,000 ft., respectively, their relative lengths are 5, 1, 4. The original perimeter of the air-course being $2(6 + 12) = 36$ ft. and the perimeter of the blocked portion $2(4 + 12) = 32$ ft., the relative perimeters of the three sections are 9, 8, 9. In like manner, the areas of the sections being 72, 48, 72, the relative areas are 3, 2, 3, respectively.

Then, calling the original and the reduced circulations, Q_0 and Q_1, respectively, the potential of the original airway X_0 and that of the blocked section and the remaining 4,000-ft. of original airway X_1 and X_2, respectively; remembering that the power on the air is $U = Q^3 \div X^3$ and, for a constant power on the air, the quantity is proportional to the potential, or the quantity ratio is equal to the potential ratio, we write,

$$\frac{Q_0}{Q_1} = \sqrt[3]{\frac{X_0^3}{X_1^3} + \frac{X_0^3}{X_2^3}}$$

The required relative potentials are then found as follows:

$$X_0^3 = \frac{a^3}{lo} = \frac{72^3}{5000 \times 36} = \frac{3^3}{5 \times 9} = 0.60$$

$$X_1^3 = \frac{48^3}{1000 \times 32} = \frac{2^3}{1 \times 8} = 1.00$$

$$X_2^3 = \frac{72^3}{4000 \times 36} = \frac{3^3}{4 \times 9} = 0.75$$

Now substituting these values in the first equation given above, since $Q_0 = 35{,}000$, we have,

$$\frac{35{,}000}{Q_1} = \sqrt[3]{\frac{0.6}{1} + \frac{0.6}{0.75}} = \sqrt[3]{1.4} = 1.1187$$

$Q_1 = 35{,}000 \div 1.1187 = 31{,}286$ *cu.ft. per min.*

Now, to restore the original circulation, without cleaning up the airway, will require an increase of power on the air in proportion to the cube of the quantity; or, in this case, 1.4 times the original power. Hence, cleaning up the airway can be considered as a saving in power equal to $(1.4 - 1)\ 100 \div 1 = 40$ per cent of the original power.

The power required to circulate 35,000 cu.ft. per min. against a 2-in. water gage is $(35{,}000 \times 2 \times 5.2) \div 33{,}000 = 11$ hp., and the saving by cleaning up the airway may be estimated, therefore, in this case, as $11 \times 0.4 = 4.4$ hp.

Taking Water-Gage Readings

Please explain where water-gage readings should be taken to show correctly the resistance of the mine?

Bellaire, Ohio. MINE FOREMAN.

In order to measure correctly the pressure producing the circulation in a mine, including the shaft, the gage should be placed on the fan drift, at a sufficient distance from the fan to enable a steady reading of the gage to be obtained. If the reading of the gage is multiplied by 5.2, and that result by the sectional area of the fan drift where the reading is taken, the product obtained will represent the mine resistance plus the resistance of the shaft, in pounds.

If the gage reading, however, is taken in the crosscut between the main intake and return airways, at the shaft bottom, the result obtained by multiplying by 5.2 and the sectional area of the air-course expressed in square feet, will be the mine resistance, in pounds, or the pressure producing the circulation in the mine, exclusive of the shafts.

EXAMINATION QUESTIONS

ANSWERED BY
JAMES T. BEARD

Miscellaneous Questions

(*Answered by Request*)

Ques.—If, with 8 hp., a quantity of 70,000 cu.ft. of air per minute was obtained, what quantity should be gotten with 24 hp.?

Ans.—In the same mine or airway, the quantity of air in circulation varies as the cube root of the horsepower on the air. In other words, the quantity ratio is equal to the cube root of the power ratio, and we write, calling the required quantity x,

$$\frac{x}{70{,}000} = \sqrt[3]{\frac{24}{8}} = \sqrt[3]{3} = 1.442$$

$x = 70{,}000 \times 1.442 = 100{,}940$ *cu.ft. per min.*

Ques.—What horsepower will be required to drive a double-acting steam pump if the vertical distance between the point of suction and the point of discharge is 150 ft., the diameter of the pump cylinder, 9 in., the stroke, 12 in., and the number of strokes per minute, 80, adding 25 per cent for friction?

Ans.—The sectional area of the pump cylinder is $0.7854 \times 9^2 = 63.617$ sq.in. For a discharge head of 150 ft., adding 25 per cent for friction, the pressure head against which this pump must operate is $1.25(150 \times 0.434) = 81.375$ lb. per sq.in. The length of stroke being 12 in., or 1 ft., and the pump making 80 strokes per minute, the piston speed is 80 ft. per min. Therefore, the horsepower required to drive this pump, under the assumed conditions, is

$$H = \frac{81.375 \times 63.617 \times 80}{33{,}000} = 12.55 \text{ hp.}$$

Ques.—If the ratio of the diameter of a plunger to the diameter of the piston of a pump is 1:2, what steam pressure will be required in the cylinder of the pump to lift water 300 ft., assuming an efficiency of 85 per cent in the water-end and 75 per cent in the steam-end of the pump?

Ans.—Calling the diameter of the steam cylinder of the pump D and the diameter of the plunger or water cylinder, d, the height of the lift, in feet, h, and the steam pressure in the cylinder, in pounds per square inch, p, we have the following:

$$p = 0.49\, h \left(\frac{d}{D}\right)^2 = 0.49 \times 300 \left(\frac{1}{2}\right)^2 = 36\tfrac{3}{4} \text{ lb. per sq. in.}$$

Ques.—Which is the most difficult of the mine gases to remove, and why?

Ans.—Carbon dioxide, accumulated at the foot of a slope or incline or at the face of dip workings or in other low places, will generally prove to be the most difficult gas to drive out, owing to the greater density of the gas which prevents it from rising and makes it necessary to employ a strong air current to drive it out from its lodgment.

Methane or marsh gas, accumulated at the head of a steep pitch or at the face of rise workings or on top of a high fall, is also difficult of removal because of its low density, which causes it to seek the roof and other high places in the mine. The relative temperature of these gases will generally determine which is the harder to remove.

Ques.—With a water gage of 4 in., a fan running at a speed of 80 r.p.m. produces 35,000 cu.ft. of air per minute; what volume of air will this fan produce when running at the same speed, against a water gage of 8 in.?

Ans.—Disregarding any slight change in the efficiency of the fan when operating against the higher gage, it may be assumed that the power on the air is the same, for the same speed of fan. That being true, the quantity of air in circulation will vary inversely as the pressure or water gage. But, the water gage being doubled in this case, the quantity of air produced against the 8-in. gage will be one-half of that produced against the 4-in. gage.

Ques.—(a) There is a current of 65,000 cu.ft. per min. passing in the return airway of a mine, 3½ per cent of which is methane (CH_4). How many cubic feet of this gas is being generated in the mine and what is the total quantity of air in the current? (b) Is this percentage of gas dangerous?

Ans.—(a) The quantity of gas being generated, in this case, is $65{,}000 \times 0.035 = 2275$ cu.ft. per min. The volume of air passing in the return is, therefore, $65{,}000 - 2275 = 62{,}725$ cu. ft. per min.

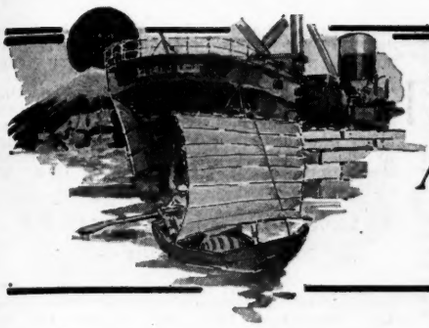
(b) This percentage of gas is undoubtedly dangerous and will require extreme caution to prevent accident, under any conditions in mining coal.

Ques.—There are 60,000 cu.ft. of air passing in a return airway and this current contains 1,500 cu.ft. of marsh gas. (a) What percentage of gas is present in the current? (b) Is this percentage dangerous? (c) Assuming the return current contained 1,400 cu.ft. of carbon dioxide instead of the marsh gas, what is the percentage of the gas and is it dangerous?

Ans.—(a) In a return current containing 60,000 cu.ft. of air and 1,500 cu.ft. of marsh gas, the total volume of air and gas is 61,500 cu.ft. The percentage of gas present is then $(1{,}500 \times 100) \div 61{,}500 = 2.4$ per cent.

(b) In the mining of soft coal, this percentage of gas would be dangerous if the coal is highly inflammable or if it generates much dust that is carried in suspension in the mine air. In the mining of hard coal, this percentage of gas may not be considered dangerous, but requires the taking of extra precautions to prevent accident.

(c) Assuming 1,400 cu. ft. of carbon dioxide in the current, the total volume of air and gas would be 61,400 cu. ft. and the percentage of gas present would then be $(1{,}400 \times 100) \div 61{,}400 = 2.3$ per cent, nearly. This would not be a dangerous percentage of carbon dioxide.



FOREIGN MARKETS AND EXPORT NEWS

Coal and Coke Exports and Imports in 1919

EXPORTS

Articles	November				Eleven Months Ending November			
Coal and coke:	1918		1919		1918		1919	
Coal—	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Anthracite, tons	.....	.....	.....	.....	26	156	.....	.....
Bituminous, tons	13	78	1,200	7,231	1,026	7,818	2,100	13,141

IMPORTS

Coal and coke:	November				Eleven Months Ending November			
Coal—	1918		1919		1917		1918		1919	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Anthracite, tons, free	1,179	8,058	13,686	98,905	11,078	45,253	31,118	188,406	62,592	449,942
Bituminous, tons, free	90,878	508,244	131,334	664,536	1,188,248	4,340,442	1,231,220	6,315,302	783,830	4,279,628
Imported from—										
United Kingdom	475	2,300	.....	.....	7,900	40,458	33,390	251,730	1,484	10,676
Canada	90,402	505,939	119,782	613,542	1,147,592	4,186,392	1,187,960	5,977,692	718,586	3,983,575
Japan	.....	.....	.....	.....	17,213	60,954	7,459	75,653	305	3,840
Australia	.....	.....	11,552	50,994	13,148	43,833	1,369	4,869	62,334	273,384
Other countries	1	5	.....	.....	2,395	8,805	1,042	5,358	1,121	8,153
Coke, tons, free	1,512	12,701	3,380	28,539	19,871	127,818	24,925	203,659	12,500	119,164

American Embargo Affects France Seriously

A statement in the New York *Sun* states that the shortage of coal facing France is more serious than at any other time since the armistice, according to a report published by the special commission which has been investigating the coal situation. Despite all efforts made by the Government to increase output the coal production of France is 40 per cent below normal and at present transportation facilities for supplying coal to Paris and other great industrial centers are on the verge of exhaustion.

This is the first problem in a long series of difficult questions that the new Government must tackle and it is safe to assume that on the outcome of the coal situation rather than on any political controversy will depend the fate of the Millerand Ministry.

The coal situation here is interesting from the American viewpoint, for it is chiefly to America that the French are looking for a solution of the problem. It is highly probable that an effort will be made soon by the French Government to obtain from Washington special permission to import American coal, the Garfield edict against exportation being the sole obstacle to the renewal of coal shipments to France and not the high exchange value of the dollar, as is generally supposed.

Negotiations were begun in 1917 between the French Chambers of commerce and the Shipping Board for the use of American shipping to transport coal to the port of Marseilles, but these were interrupted by the events of the war. It is expected now, however, that they will be renewed. An intensive study is being made by leading French industrial experts of the specific characteristics and qualities of the products of the various American coal basins in order to determine upon a rational utilization scheme.

These experts have reported already that Virginia coal, particularly from the Pocahontas and New River basins, offers the best prospect both from the viewpoint of quantity and price. The Maryland and Pennsylvania coals, which are shipped from Philadelphia and Baltimore, are sought especially for their coke and gas-making properties, and in these properties they have few equals in Europe.

Plans for the shipment of coal from these regions to the south of France are being prepared and will be ready to be put into execution as soon as a governmental arrangement for the export of this coal can be concluded. French shipping men assert that American ships can expect a better return cargo by touching at French Mediterranean ports than anywhere else in Europe.

The French African colonial possesions offer unlimited resources in tropical fruits, barks, vegetables, nuts, ochres, cork, etc., which, it is pointed out, can be loaded in Marseilles. It is by offering American importers these and other facilities that the French hope to attract coal bearing tonnage to the ports.

Adrien Artaud, president of the Chamber of Commerce of Marseilles and now a member of the Chamber of Deputies, expresses the hope that Americans will be able to replace the Germans in furnishing coal for the great southern port.

"Not only replacing the Germans," he adds, "but also to step in where the British farmers occupied an important place Great Britain, which needs all her fuel production for her home industries and for provisioning her enormous fleet, no longer will be in a position to furnish France with the pre-war supply. It is my sincere hope that America will take her place."

Chinese Coal Sells High

China is hardly in a position to vie with either America or Great Britain in the production of coal. The principal colliery is that of the Kailan Mining Administration, its British partner being the Chinese Mining and Engineering Co., at Kaipling, North China.

Brought to Shanghai by steamship, coal fetches for industrial purposes $14 to $16 a ton, and for household use $18 to $21, both grades being inferior in quality to the British or American product.

High Prices in Italy Lure Lehigh Coal

Railroaders say considerable of the output of the Lehigh coal fields is being sent to ports where colliers await it for transfer to the Italian kingdom, where coal is being sold at from $40 to $60 a ton.

It is understood gilt-edge prices are being secured here by coal companies for fuel being sold to Italy and also that payment is made in advance. Those who know the prices decline to make them public, but claim that coal from the Hazleton district will bring $75 a ton by the time it reaches the stoves of the people in Italy.

Kailan Coal Output

The annual output of coal by the Kailan Mining Administration is over 3,000,000 tons, of which 1,282,733 tons were exported in 1918. In that year 33,244 tons of coke were produced, of which 16,991 tons were exported. The older machinery used is of mixed origin, but all of that recently installed is of British manufacture.

The Kailan Mining Administration is an amalgamation effected in 1912 of the Chinese Engineering and Mining Company, Ltd. (British), and the Lanchow Mining Company (Chinese), the present Chinese interests being reported as merely nominal.

COMPARATIVE STATEMENT OF LAKE COMMERCE THROUGH CANALS AT SAULT STE MARIE, MICHIGAN AND ONTARIO FOR THE SEASONS OF 1918 AND 1919

Items	Total Traffic for Season 1918	Total Traffic for Season 1919	Increase or Decrease Amount	Increase Per Cent.	Decrease Per Cent.
Vessels:					
Steamers, number	17,067	14,866	2,201	...	13
Sailing, number	1,634	1,218	416	...	25
Unregistered, number	1,909	1,503	406	..	21
Total number	20,610	17,587	3,023	...	15
Lockages, number	14,903	12,302	2,601	...	17
Tonnage:					
Registered, net	61,100,244	50,089,090	11,011,154	...	18
Freight, short tons	85,680,327	68,235,542	17,444,785	...	20
Passengers, number	34,990	56,992	22,002	63	..
Lumber, M.ft.b.m.	296,919	244,426	52,493	...	18
Flour, barrels	8,228,844	8,087,554	141,290	...	2
Wheat, bushels	122,718,146	113,734,848	8,983,298	...	7
Grain, bushels	30,800,621	52,734,345	21,933,724	71	..
Copper, short tons	86,078	58,409	27,669	...	32
Iron ore, short tons	60,551,296	46,922,792	13,628,504	...	23
Mfd. and pig iron, short tons	38,767	117,713	78,946	204	..
Coal, soft, short tons	15,770,560	11,461,962	4,308,598	...	27
Coal, hard, short tons	2,211,050	2,412,989	201,939	9	..
Salt, short tons	81,007	93,893	12,886	16	..
Oil, short tons	334,134	387,023	52,889	16	..
Stone, short tons	402,009	71,170	30,839	...	8
General merchandise, short tons	494,437	542,17	47,741	10	..

The United States Canal was opened April 10 and closed Dec. 15, 1919; season, 250 days.
The Canadian Canal was opened April 12 and closed Dec. 15, 1919; season, 248 days.
Compiled at St. Marys Falls Canal, Michigan, under the direction of Lieut. Colonel E. M. Markham, Corps of Engineers, U. S. Army.

Cosgrove & Co. To Own and Operate a Steamship Line

Owing to the scarcity of boats for foreign trade, Cosgrove & Co., a coal firm with home offices in the Swank building, Johnstown, Pa., has obtained a charter for one of the firm's associated companies and will operate a boat line of its own in its exporting business. Cosgrove & Co. operates coal mines extensively both in the East and in the Middle West and through a branch company exports a large part of the product.

It was announced today at the home offices of Cosgrove & Co., says the Johnstown *Tribune*, that a charter had been granted at Albany, N. Y., to the Wyngrove Line, Inc., an associated company of the Cosgrove firm J. C. Cosgrove, President of Cosgrove & Co., explained that, owing to the scarcity of boats for the foreign trade and the rapid growth of the company's business, it had become necessary to make arrangements which would insure the foreign trade prompt delivery.

The Wyngrove Line, Inc., has purchased one boat and is completing negotiations for four others. It is planned to have the line in actual operation by spring of this year. The officers of the line are:

F. Le Maistre, President, who has been prominent in the financing of large steamship business for a number of years; Daniel J. Boylan, Vice President, well known in the New York Coal Trade as the owner of the Boylan Towing & Transportation Company; C. B. Wynkoop, Secretary and Treasurer, member of the firm of Cosgrove & Wynkoop, Ltd., and Cosgrove & Wynkoop Coal Co.

The Board of Directors is composed of men prominent in financial circles of New York, as well as coal men of equal prominence in the central Pennsylvania field. The Wynkoop Line will have its general office in the Cosgrove & Co. suite of offices in the Singer building, New York City.

Foreign Vessels Permitted to Bunker

Under date of Jan. 27, J. W. Howe, commissioner, Tidewater Coal Exchange of New York City, sends the following communication:

"Have following wire from Regional Coal Committee, Philadelphia, reference to bunkering coal permits.

"My wire Jan. 23 is modified to this extent: Bunkering of vessels flying foreign flags sailing to European destinations will not be limited to sufficient coal to take them to Halifax, but will be permitted to bunker coal to take them to their outbound destinations. This does not change in any way the rule requiring bunkering at Hampton Roads of boats passing that port enroute to southbound destinations."

Bunker Restrictions Modified

The following has been received on Jan. 29, from Mr. Howe, commissioner of the Tidewater Coal Exchange of New York City:

"Instructions for the bunkering of foreign flag vessels are modified to the extent that sufficient coal may be bunkered to carry vessels to outbound destinations."

German Miners Oppose 6-Hour Day

A statement in the New York *Sun* on Jan. 27, states that a conference held in Gelsenkirchen, Westphalia, of the delegates of the Christian Miners Union, which has a membership of 100,000 workers, adopted a resolution opposing at present the introduction of a six-hour working shift in view of the prevailing economic conditions.

The resolution indorsed the principle of a shorter working day and demanded that the Government and the mine owners should strive to have it introduced as soon as possible. Meanwhile the resolution said, miners should be paid extra for working their present hours. At the same time the resolution called upon the miners to avoid possible interruption in the nation's economic activities through decreased output.

Representatives of the Ministry of Labor and of the Coal Miners Union met at Ochum to discuss the six-hour work-day issue. The Government's representative urged the miners to desist from their attempts to force such a concession at this time in view of the industrial situation and the deliveries of coal to the Entente required under the terms of the peace treaty. He declared that the issue was one that should be left to international adjustment. He added that the Government approved the plan for the shortening of the working day and the improvement in the working and living conditions of the miners.

The Representative-General of the commission of German labor unions supported the Government's attitude and a commission comprising representatives of the Government and of the miners and mine owners was appointed to confer on the situation in the course of the next few days.

Through the closing of the Berlin railway repair shops 7,000 workers are temporarily without employment. The plants probably will be idle until the midde of February, when, it is hoped, a new wage agreement will have been decided on, based on the piece work or premium system.

Australian Shipments

The following cablegram has been received from the American consul at Newcastle, Australia, dated Jan. 9, according to recent report of the Department of Commerce, regarding the output of coal during December and the oversea shipments: During the month of December the total amount of coal mined was 401,000 tons, value at £321,000. There were 40,334 tons, including 27,283 tons, to New Zealand, exported overseas.

Bunkers furnished overseas vessels were 32,160 tons, including 4,000 tons to those bound to New Zealand and 19,000 tons to vessels bound to the United Kingdom; 1,000 tons for Peru now being loaded on an American sailing vessel; 3,500 tons of Newcastle coal will be taken to Callao by an American vessel now discharging at Melbourne.

Strike of marine engineers, which began on Dec. 16, still in effect and likely to continue several weeks; 6,000 men most wharf laborers, are idle; at steel works one blast furnace is shut down, unable to obtain supplies of ore; other trades are affected.

Coal for Italy

Matteo, Ghio, Genoa, Italy, writes Charles S. Allen, secretary of Wholesale Coal Trade Association of New York City, in part as follows:

"Our object is to represent eventually some first class exporting house of bituminous coals, such as New River, Pocahontas, Westmoreland, Kanawha, etc. on the Italian market. We respectfully request you to put us in communication with some such house (not yet represented here), who desires to initiate business relations with Italy.

"We are fully aware of the present coal crisis in the United States due to the recent strike, and do not expect to do business immediately, but we think best to treat now regarding our eventual representation, so that by the time we will have reached an agreement the present situation will have changed for the better. We are disposed to furnish first class references, banking and others."

Brazil's Coal Exports

The Consulate General reports from Rio de Janeiro that during September coal imports into Brazil totaled 9,294 metric tons, of which 5,388 tons were British coal and 3,906 tons American coal. In September 1918, all the coal imported, 16,032 tons, came from the United States, and in the corresponding month of 1917 of the 25,365 tons imported 19,364 tons were American coal and the remainder, British.

Tidewater Demurrage

News ticker advice is that the tentative decision of the Interstate Commerce Commission in the case of this Association against the Railroad Administration has been handed down, in which it is held that three days, under the average agreement, from Dec. 1, 1918, to March 1, 1919, was unreasonable and that five days would have been reasonable and that the charge of $3 a day was unreasonable to the extent that it exceeded $2 a day, held to be reasonable.

If this is a correct report of what is in the tentative decision it means that reparation may be recovered for the difference in demurrage charges figured on the three day and $3 basis, on which the bills have now been rendered, and five days average and $2 per day.

It is to be understood, of course, that this is merely the tentative report of the examiner who heard the case and opportunity is afforded each side to file exceptions to the report and argue the same before the commission, after which a final decision in the matter is made.

Coal and Coke Exports for December

Exports of coal and coke, as shown by returns to the Department of Commerce, for December, 1919, and those for the corresponding month of 1918, as finally revised, were as follows:

	December	
	1918	1919
Anthracite	292,014	345,402
Bituminous	1,140,455	341,064
Exported to:		
Italy	—	11,040
Canada	903,210	208,091
Panama	6,000	16,300
Mexico	9,836	8,489
Cuba	89,779	57,478
Other West Indies	21,239	19,633
Argentina	—	—
Brazil	21,974	4,590
Chile	15,821	4,226
Uruguay	41,358	—
Other countries	31,238	11,217
Coke	93,100	43,320

Coal-Mining Developments in Holland

A bill is under consideration of the States-General to develop the coal mining industry in Dutch Limburg. It is stated in the memorandum explanatory of this bill that the output of the state coal mines amounted to 2,804,546 metric tons in 1918; and it is estimated that the output will be 5,200,000 tons in the year 1925, provided that sufficient skilled labour is available. Minerals have been discovered in the Netherlands in workable quantities in two large districts (where coal is found) viz., South Limburg and "de Peel" (Limburg); and in two smaller areas, viz., Winterswijk (rock salt and coal), and Buurse-Hengelo (rock salt).

The Government intend to develop the mining industry in South Limburg as vigorously as possible. The amount of coal in this area is estimated at 4,554 million tons situated at less than 1,200 meters below the surface. In the "Peel" district, to which belongs geologically the small area east of Roermond, in the municipalities of Vlodrop, Melick, and Herkenbosh, there are approximately 1,776 million tons of coal in workable seams at a depth of less than 1,200 meters.

It is this Vlodrop-Melick-Herkenbosch area which by the present bill is to be added to the State coal fields. The coal at Winterswijk is situated at a great depth, and it is not certain whether it can be worked.

Coal Traffic in the Ruhr District

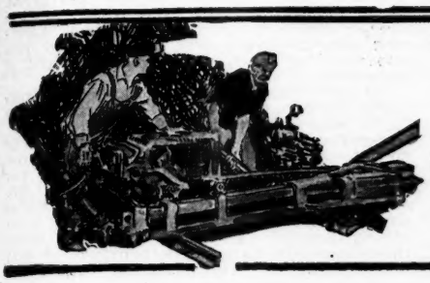
For the week ending Jan. 3, states a recent report in the *Colliery Guardian*, the average daily supply of railway wagons was 15,700 tons, full quantity requisitioned being available. In the same period pit stocks fell from 564,000 tons to 525,000 tons. The flooded state of the Rhine caused a decline in the operation of the Duisburg-Ruhrort tips, only barges being available for loading in the absence of larger craft.

At the same time the water in the Rhine-Herne canal rose so high as to prevent traffic passing under the bridges. The canal pits loaded an average of 22,200 tons per diem.

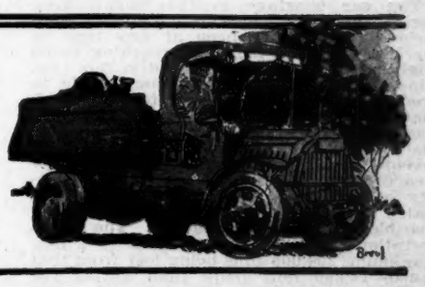
English Export Levy Lifted

The following notice was posted on the Cardiff Exchange on Saturday, states a recent report in the *Colliery Guardian*, by the district secretary of the South Wales Coal Exporters Association:—

"Coal exporters are informed that as and from Jan. 1, 1920, the levy of ½d per ton made on all coal exporters, colliery owners, and ship owners, no longer continues in its old form. However, it has been found necessary to make a levy of one-tenth of a penny against the exporters only to keep in existence the machinery for supplying our different departments and foreign Governments with the usual daily returns of shipments, etc.



COAL AND COKE NEWS



Charleston, W. Va.

Plants in southern West Virginia operate about two full days per week ended the twenty-fourth. Chesapeake & Ohio helpless. Weather conditions hold back production. General congestion follows coal diversion. Kanawha production at lower ebb than during strike. Embargo on Eastern shipments. New River conditions bad; Monday only day coal is loaded satisfactorily.

Deep dents were inflicted on production throughout this section of the state between Jan. 19 and Jan. 24. As serious as the situation had been during the previous week, it was even more discouraging during the period mentioned, the output reaching extremely low ebb; the general average of production for the week was not over 40 per cent, while during the latter half of the week it was even less than that, the twenty-fourth in fact witnessing only about a 30 per cent supply of empties. There was possibly a 75 per cent supply of empties available on the nineteenth. From that day until the end of the week the supply grew less and less. For instance while Chesapeake & Ohio loadings reached 133,000 tons for Monday, tonnage handled dropped to 79,000 for Tuesday and Wednesday and on Friday only 52,750 tons of coal were loaded. Of course widespread suspension of operations followed in the wake of such an inadequate car supply. In the main, it may be safely estimated, plants did not operate more than two full days during the entire week. Of course protests poured in upon the Chesapeake & Ohio, but that road appeared to be helpless.

Adverse weather conditions also conspired to hold back the production and shipment of fuel from this area. While all streams were high and some of them were above their banks no serious damage to mines in any vicinity were reported. On the other hand continued rains throughout the week resulted in many slides at various points, tieing up railroad traffic to such an extent as to make the movement of either loads or empties decidedly uncertain. Ice-coated rails also retarded freight movement. With motive power inadequate, even under favorable circumstances, physical conditions made it even more difficult to move loads and empties with any degree of dispatch.

Railroads operating in this section were excluding commercial customers from a supply of coal, during the week ended the twenty-fourth, through an embargo effective in certain regions against eastbound shipments, except in cases where such shipments were intended for railroad use. While contract customers were calling vociferously for coal, little coal was being sent to them, mainly because the railroads were insisting upon being served first, as they have been continuing to insist for some time notwithstanding the fact that much of the coal diverted during the strike is still awaiting disposition. As much of the coal diverted was contract coal, it is pointed out by operators that railroads have fought shy of utilizing such diverted coal in order to secure a supply at cheaper prices. General congestion as an aftermath of heavy diversions during the strike plus unfavorable weather conditions only aggravated conditions, insofar as the operators in this section are concerned. Although the continuance of an embargo as to Eastern shipments indicated congestion in the East, and hence a sufficient supply for domestic use, export restrictions were still in force much to the exasperation of exporting agencies.

Mines of the Kanawha field were laboring under many handicaps during the week ended Jan. 24. The number of cars furnished mines in the district was even slimmer than during the exceedingly poor production week ended the seventeenth. In fact production was at a lower ebb, it is believed, than at any time during the strike, the only day on which loadings were within hailing distance being the nineteenth. After that production was under 50 per cent and most of the time during the week it was only 40 per cent. As an instance of the poor supply, only a total of 318 cars were furnished mines in the whole district on the twentieth. Consequently production was under rather than over 15,000 tons a day throughout the week, making the week's output at points on the Chesapeake & Ohio considerably below 100,000 tons. On the twenty-third, for instance, only 14,450 tons of coal were loaded. Upon the whole it is not believed the average plant was in operation more than a third of the time during the week.

Weather conditions also played a part in holding back production, slides at many points both on the main and branch lines of the Chesapeake & Ohio being frequent. For instance the Coal River branch of this railroad was out of commission for several days owing to incessant rains. Even telephone lines were out of commission. Points to which Kanawha mines could ship were limited owing to an embargo on Eastern shipments, except insofar as railroad fuel was concerned. In the face of a strong demand for byproduct and steam coal and with contract customers demanding deliveries, transportation conditions were decidedly discouraging during the week. There was also a strong demand in the district for coal for export but the lid was still clamped down except as to about 50 per cent of normal export shipments.

Conditions in the New River field were just about on a par with those in the Kanawha field, with production just about on the same level, and with transportation disabilities figuring as the most potent factor in putting a crimp in production. In comparison with the week ended the seventeenth, the district suffered more during the week ended the twenty-fourth, there being just one day when it was possible to load coal to any degree of satisfaction and that was Monday, the nineteenth. With a shortage of cars so acute, many mines were compelled to mark time during at least two-thirds of the week, and the general average of daily production throughout the period named was not more than 14,000 or 15,000 tons; loadings in the New River field, or rather that part of it supplied by the Chesapeake & Ohio, being only 14,500 tons on the twenty-third. Production for the entire week was, therefore, not over 90,000 tons, if that much. Branch lines of the Chesapeake & Ohio were also out of commission in the New River field, so that between a poor car supply, adverse weather and inadequate motive power, the week ended the twenty-fourth was one of the worst since the beginning of the November strike. On top of conditions so prejudicial to large production, there was an extremely stiff demand for New River smokeless, but neither contract coal, spot coal nor export coal was shipped in the quantities warranted by market conditions owing to the poor transportation service and the continuance of export restrictions.

Bluefield, W. Va.

Acute car shortage, adverse weather conditions and inadequate motive power hold back production greatly. Output of Tug River and Pocahontas fields much reduced. Norfolk & Western tied up by heavy slides. Worst car shortage in recent weeks in Winding Gulf field. Both Chesapeake & Ohio and Virginian systems contribute to loss of tonnage.

What between an acute car shortage and high water, combined with severe winter weather, production was reduced to the minimum throughout the southern part of the state during the week ended Jan. 24. Indeed, production closely paralleled the output during the Christmas holidays but from entirely different causes. While from the very outset of the week, the shortage of empties was serious enough, it grew rapidly worse during the last three days of the week.

Continued rains throughout the week not only affected railroad transportation but it also affected actual mining operations in various fields. Loading tracks in a number of instances were inundated and damaged and production generally brought to a standstill, a heavy tonnage loss ensuing. Railroads suffered most from numerous slides which forced a suspension of traffic, but sleet also slowed up traffic to a very considerable extent. Few cars came in from the West, due undoubtedly to adverse weather conditions and to a continued congestion at Western terminals and gateways.

A shortage of motive power also played a large part in holding back production and in aggravating the car shortage. The movement of such coal as had been produced and loaded was extremely slow and the delivery of empties for the same reason was far behind time, so that between the two there was considerable congestion. Then, too, not many cars were coming back very promptly from the East, as has been the case since export shipments were so materially curtailed, that of course adding to the car shortage.

An embargo became effective Jan. 24 on all shipments of coal from the Clinch Valley, Thacker and Kenova districts, consigned to tidewater, except when moving under numbered permit.

There was in the Tug River district during the week ended Jan. 24 between a 40 and a 50 per cent loss attributable solely to a dearth of cars and the causes leading to such a shortage. In other words production during the week mentioned dropped from 75 to about 50 per cent or even less, as compared with the previous week. Empties furnished throughout the week grew less in number as it advanced. In the first place inclement weather made it hard to move cars with any celerity from the West and of course the Norfolk & Western obtained few cars from Western connections. Between ice-coated tracks and high water, traffic was held at a standstill for hours at a time, long stretches of track being obstructed by slides. Inadequate motive power was another factor in holding back production. Only 55,000 tons were produced in the Tug River field during the week ended the twenty-fourth.

The car situation and other conditions in the Pocahontas region were similar to those in the Tug River district for the week ended Jan. 24 and were important factors in holding back production. The Norfolk & Western was almost completely tied up by heavy slides at various points on the Pocahontas division. Sleet and heavy rains also had quite a serious effect on operations, mines being put out of commission in some instances through high water, although no cases of serious damage have so far been reported.

As showing how seriously the mines of the Pocahontas region were affected it is only necessary to point to a car-shortage loss of 188,366 tons, with a labor-shortage loss of only 5,118 tons and a mine-disability loss of 12,254 tons. Coal manufactured into coke during the week amounted to 10,765 tons.

One of the worst car shortages in recent weeks drove production in the Winding Gulf field to a still lower level during the week ended the twenty-fourth. The shortage in existence was observed both on the Chesapeake & Ohio and the Virginian railroad systems.

Huntington, W. Va.

Guyan field hard hit by car shortage. Transportation loss mounts to new maximum. Production more than 100,000 tons a week behind weekly average of strike period. Operator's committee goes to Washington to have "heart to heart" talk with director general of railroads.

The car shortage in the Guyan field, during the week ended Jan. 24, was more serious than it has been at any time in the last year and more far reaching in its blighting effect. It was so bad in fact that mines of the field found it impossible to produce more than 132,000 tons of coal, that representing a further decrease in production of 42,000 tons as compared with the production during the week ended the seventeenth. Perhaps a further and better idea of the heavy loss caused by the scarcity of cars may be gathered when it is stated that over three thousand hours of possible working time was lost. The transportation disability loss mounted to a new maximum, 204,000 tons being lost from that cause—10,000 tons more than during the previous week. The potential tonnage of the Guyan field is 345,000 tons. During the strike, on an average of 240,000 tons a week were produced, so that production during the week ended the twenty-fourth was running more than 100,000 tons a week behind strike production.

The situation had become so serious in fact that a group of Huntington coal operators left on Jan. 28 for Washington, D. C., where they stated they proposed to have a "heart to heart" talk with the director general of railroads, pointing out that the Chesapeake & Ohio was furnishing only a 50 per cent supply of cars, also charging that coal diverted during the strike was still being held, and that the cars in which such coal was loaded were, in effect, being utilized for storage purposes. In the party were: J. R. Vest, A. Litz, J. J. Ross, James D. Francis, Walter Thurmond, A. R. Beisel, J. A. Kelley and Herbert Jones.

Logan operators were falling further and further behind in their attempts to fill orders and their customers could not understand, it was said, why they should not be able to make better deliveries of coal. Of course under conditions described export shipments were cut to the very quick, only a certain proportion of a limited tonnage being allowed to go forward to tidewater for overseas shipmeint. Tonnage handled by the Chesapeake & Ohio system during the week ended Jan. 24 was 95,550 less than during the previous week, the number of cars transported dropping from 11,454 to 9,543. Between Jan. 19 and Jan. 25, a total of 6072 loaded coal cars were handled by the road through Clifton Forge, Va., for Eastern distribution.

Fairmont, W. Va.

Serious cut in production due solely to a car shortage in northern West Virginia. On Jan. 24 there were 110 idle mines on Monongah division of Baltimore & Ohio. Adverse weather conditions interfere with movement of cars part of week. Development in regard to railroad fuel.

Less coal was produced in northern West Virginia mining fields during the week ended Jan. 24, than at any time since before the strike of Nov. 1, the serfous cut in production being attributable solely to a car shortage and an extremely serious shortage at that. While in other weeks the mines of northern West Virginia have managed to load a fairly large tonnage during the first three days of the week such was not the case during the weekly period ended the twenty-fourth for at the very beginning of the week there was less than an 80 per cent supply of empties available on the Baltimore & Ohio for instance. The Tuesday supply of cars was only half of requirements. From Wednesday until the end of the week the number of empties furnished in most regions hovered around 30 per cent. On the Monongahela R.R. there was only about a 20 per cent supply of cars during the last half of the week.

Of course under such conditions many mines found it impossible to operate, there being 119 mines on the Monongah division alone of the Baltimore & Ohio idle on Thursday and 110 idle mines on Saturday. At various times during the week there were 466 idle operations on the Monongah division of the Baltimore & Ohio. Even in cases where mines were able to secure cars, empties only sufficed for part of a day's normal loading. Late placements also contributed further to a reduction in the tonnage. Similar conditions of course prevailed elsewhere in the northern part of the state and half the time mines were shut down for want of cars.

While adverse weather conditions during a part of the week also tended to interfere with the movement of coal and with the delivery of empties, yet that could not be given as an excuse for the shortage of cars lasting throughout the week. However, slides and sleet did make operations difficult for several days and on some of the smaller roads put a complete quietus on the movement of coal for several days. While high water threatened to interfere materially with the operation of both railroads and mines not otherwise affected, streams subsided before any real damage was done; slides were the worst factor with which railroads had to contend.

The filthy condition in which empties were received, necessitating cleaning, prevented prompt loading and retarded the week's production. While it was learned that there were approximately 5,000 coal cars loaded with slag within reach of northern West Virginia regions, and while producers offered to unload the slag at railroad expense, as a means of securing more cars, yet even that failed to bring any more cars into the northern part of the state.

Railroad fuel shipments during the week ended the twenty-fourth were comparatively light. A development of the week was the notice served by the railroads on producers that the latter must fill their contracts with the railroads before shipping coal to any oher class of consumers. From that notice it was inferred that railroads would resort to the assigned car system or to confiscation unless operators were "good." Inasmuch as railroads have been confiscating when the notion struck them, little heed was given to the notice.

There is quite heavy demand in all northern West Virgina fields for both gas and steam coal, a demand it is utterly impossible to fill, operators not being able to take care of contracts let alone ship any "free" coal. Since export shipments were shut off, the tonnage for Curtis Bay during the week ending the twenty-fourth was extremely light.

Norton, Va.

Output above average in Virginia fields. Production 167,000 tons. Heavy shipments for export. Producers in financial straits due to tardy settlement for coal.

The percentage of production was somewhat above the average in the Virginia fields during the week ended Jan. 24, there being only a 15 per cent loss in production. In other words an output of 167,000 tons represented an 85 per cent production, although there was a loss of 30,000 tons attributable entirely to a shortage of cars at various points. Heavy shipments were made during the week to Norfolk, Va., as well as to Charleston, S. C., for export, there having been an especially strong demand from foreign sources.

Labor trouble has been at a minimum since the first of the year in the Virginia fields, since a few Russian agitators who terrorized the St. Charles region were removed. Producers, however, still find themselves in financial straits from November diversions of coal, since both the railroads and ultimate consumers, to whom coal was diverted, have been and are still extremely tardy in making settlement.

Ashland, Ky.

Bad weather conditions main cause of loss in production. Slides suspend freight traffic on Big Sandy. Engine failures and poor motive power congest traffic. Production of coal in northeast Kentucky running behind that of corresponding period last year.

Heavier losses in production were sustained in the northeastern Kentucky district during the week ended Jan. 24 than during the preceding week, production dropping from 135,990 tons to 119,735 tons or from 59 to 54 per cent. There was, of course, a corresponding increase in the total loss which advanced from 94,660 to 103,110 tons or from 41 to 46 per cent. Railroad disabilities were increased to the extent of 13,00 0tons, bringing the total loss in that respect to 89,00 0tons or 40 per cent of the entire productive capacity of the mines.

Unfavorable weather conditions were mainly responsible for the increased production loss, as all parts of the northeast Kentucky field experienced severe sleet storm. On top of the sleet storm there were no less than six slides on Friday, the twenty-third, on the Big Sandy division of the Chesapeake & Ohio, forcing a suspension of all freight traffic. So completely was the Big Sandy division out of commission that only about 40 cars of coal were loaded on the twenty-third.

Conditions are such in fact that loading is falling behind total loadings for the month at the height of the strike when man power was greatly curtailed. Transportation disabilities alone are to blame for such conditions.

Many engine failures in the northeast Kentucky field delayed even what empties were available in reaching the mines. Likewise poor motive power also affected the movement of loads and tended toward a congestion of traffic generally.

Up until Jan. 23 the production of coal in the northeast Kentucky field was running 25,000 tons behind production for the corresponding period of 1919 when there was no market; whereas at the present time there is a particularly strong market for all grades of northeast Kentucky coal, the supply, however, because of conditions already described, running far in the rear of the demand. At the close of the week there appeared to be little prospect of any improvement in transportation conditions.

Sydney Mines, N. S.

Extensive improvements planned by the Nova Scotia Steel & Coal Co., Ltd. Steel tipple to be constructed and electrical equipment installed at Jubilee colliery. Improvements to cost $90,000. Development in lower seam to be pushed and daily output increased to 1,500 tons. Submarine dispute would be settled by amalgamation.

Plans are now being prepared by engineers of the Nova Scotia Steel & Coal Co., at Sydney Mines, for the construction of a steel tipple at Jubilee colliery to cost in the vicinity of $90,000; furthermore electrical equipment for the mine and other improvements are planned, which will mean practically the doubling of the present output from the colliery within the next few months, says the Sydney *Daily Post*.

The local officials have tentative plans for the spending of large sums of money at the Sydney Mines plant, in improvements and new works. Owing to the absence of President MacDougall for the past two months on business matters of importance, it has not been possible for him to go over the plans and make any definite decision as to the extent of the outlay which will be made.

The Jubilee will, before many months have passed, be Scotia's biggest producer. Development work in the bottom seam is being pushed vigorously at the present time. The daily output from this seam is now about 100 tons, and is obtained from one longwall machine. In a short time this amount will be substantially increased. At present the men working in the lower seam are lowered to the pit bottom by means of the coal cages, but workmen are now engaged in retimbering the shaft from the top seam to the lower one, and in a short time, the miners will be lowered in the regular man cage.

Considerable electrical equipment is to be installed shortly on the surface at this mine which will mean greater and more efficient service in the handling of the mine's output. By midsummer officials hope to have a daily output from both seams of about 1,500 tons. The output from all the company's mines for the present year has not been quite as good as it was in December, there being raised approximately 2,200 tons daily. Two-thirds of this tonnage is required for the operation of the coke ovens and other portions of the plant, and the local sales practically takes up the remainder, so that there is little left for export. Under these circumstances the bunkering trade is practically nothing.

There are no new developments regarding the dispute over the submarine areas between the Scotia and Dominion companies. Until it is definitely settled one way or the other as to whether the proposed merger between the two companies is going through, it hardly seems likely that the provincial Government will render any decision in the matter. The amalgamation of the two companies would be a happy solution of the present difficulty.

Victoria, B. C.

Title to Vancouver Island coal area again in the courts. Granby company vs. Esquimalt & Nanaimo Ry. Big plants at Cassidy's and Anyox involved. Previous legislation reviewed. Coal and coke production statistics of British Columbia for 1919 given in detail.

Once more the title of the Granby Consolidated Mining & Smelting Co. to the Vancouver Island coal area, which they are developing, is being contested in the courts of British Columbia. The action has been brought by the Esquimalt & Nanaimo Ry. Co. against Charles Wilson and Angus C. McKenzie, who are executors under the will of the late Joseph Ganner, and the mining and smelting company.

To the Ganner estate belonged much of the coal land, to which the Granby company acquired title from the province of British Columbia under the terms of the Vancouver Island Settlers' Rights Act, 1904, Amendment Act, 1917. Since the acquisition of this property the company has installed collieries at a point colloquially known as Cassidy's, equipped with modern plant, and has built up a community which, in respect of the accommodation provided for officials and workmen, is considered to be a model, at an expenditure aggregating approximately $2,000,000. In the short space of little more than a year, the company has put the mines of Cassidy's on a producing basis of about 700 tons a day. Depending on the coal from this colliery, the Granby company has installed at its smelting centre, Anyox, B. C. (where it is engaged in the mining and the smelting of copper ore,) byproduct coking ovens, at a cost of about $2,500,000. For these reasons the law suit referred to is of first importance to the company and of much interest to the entire western Canadian mining industry.

The Esquimalt & Nanaimo Ry. Co. asks the courts to declare that the Crown Grant issued by the provincial Government to the defendants is null and void in-so-far as it purports to grant coal, coal oil, stone, clay, marble, slate, mineral and substances in and under the said lands, and that part of the surface of such lands to which, or upon which, the plaintiff is entitled to exercise acts of ownership, purchase or rights to easement. An injunction also is sought restraining the defendants "their servants, agents or workmen or assigns from entering and working or mining for coal and other minerals and substances and from registering or applying to register any title to the surface of the lands." The plaintiff also seeks a declaration that the plaintiff always has been the owner of the lands and damages against the defendants.

Wtih reference to this case it is well to note that the Settlers' Rights Act of 1917, which was passed by the provincial Government and under the terms of which the Crown Grants now assailed were issued, was disallowed by the Dominion Government in May, 1918. The Grants in question were given after the passage of the Act and before the Federal Government disallowed it. The point, therefore, arises as to whether the Settlers' Rights Act of 1917 was legally operative during the period that lapsed between the affixing of the signature of the Lieutenant Governor and the receipt of the formal declaration of its disallowance at Ottawa.

The official estimate of the coal production for British Columbia during 1919 places it at 2,504,423 long tons, of which 147,205 tons were made into coke, leaving the net production for use as fuel at 2,357,218 tons. These figures show a decrease as compared with 1918 of 74,301 tons gross and an increase of 54,973 tons net. The quantity of coke made was about 98,598 tons, which is a decrease of about 90,369 tons as compared with the previous year. The decline in coke production is explained by the quite small output of the ovens of the Crow's Nest Pass Coal Co. It was affected by the long-drawn-out strike of the coal miners and by the closing down of the smelters of the boundary district.

The Provincial production of coal is summarized as follows:

	Tons of 2240 lb.
From Vancouver Island collieries	1,690,724
From Nicola and Similkameen collieries	152,731
From Crow's Nest Pass collieries	659,408
From Telkwa collieries	1,560
Total quantity coal mined	2,504,423
Less made into coke	147,205
Net quantity of coal produced	2,357,218

In addition to the above net production of coal there was made into coke the production shown as follows:

	Tons of 2240 lb.
From Vancouver Island collieries	43,517
From Nicola and Similkameen collierier	—
From Crow's Nest district collieries	55,081
Total	98,598

It is observed that the coal mines of the province have had a fairly good year but that there were some interruptions; among which are the strike of Fernie, which closed the mines during June, July and August (work being resumed at the beginning of September), and the fact that the Vancouver Island mines during the months of May, June and July worked on slack time, losing a production of probably 160,000 tons.

PENNSYLVANIA

Anthracite

Shamokin—Local coal production will be increased to the extent of several thousand tons a week shortly when the Slope Mountain Coal Co., which is opening a new colliery on the Helfenstein tract here, will begin operations. The new mine will develop deposits hitherto untouched. New York capital is largely interested in the project.

Tamaqua—Officials of the Lehigh Coal & Navigation Co., are said to be of the opinion that the mine fire in the Greenwood workings, one mile north of the town, is now extinguished. No. 14 colliery, one of the largest in the district, is now in full operation over the burned section; as the underlying seams are being developed no trace of the fire is found, lending strength to the belief that the fire has either burned itself out or has been smothered. This fire started more than fifty years ago.

Pittston—The Scranton, Pittston Coal Co., has secured a preliminary injunction against the mayor and councilmen of Pittston, to restrain the city officials from interfering with the company in sinking a shaft within the city limits without first filing plans for the new mining operations. The proceedings question the legality of an ordinance adopted by Pittston providing that a coal company, before opening any new shaft, slope or drift within the city limits, should first file a plan or draft of the extent and nature of the proposed mining operation and the precautions taken to support the surface.

Pottsville—It has been reported that the present policy of the Hudson Coal Co., in selling some of its collieries in the Northern anthracite field, is to gradually withdraw from the Lackawanna Valley and develop its extensive properties in the Southern anthracite basin. In connection with this report the following statement from the *Eagle* of Reading, Pa., is of interest: Fifty million dollars will shortly be invested in developing the virgin coal lands of Schuylkill County, and considerable significance is attached to an announcement that E. B. Smith & Co., bankers of Philadelphia, have leased offices in Reading and will at once open business, with their own private wires, to New York and Philadelphia.

Hazleton—Plans for stripping the top from the coal measures of the Crystal Ridge tract were ordered prepared by the Cranberry Creek Coal Co., The Crystal Ridge colliery has been used as a feeder for the Cranberry mines since the Crystal Ridge breaker burned down.

The old Linderman & Skeer mines, at Stockton, near here, will be drained through the Lehigh Valley Coal Co.'s Shaft colliery. Additional pumps are now being installed to take care of the water from these old workings.

It is stated that the three collieries of the G. B. Markle Co., north of here, idle since Jan. 1, 1920, resumed operation on Jan. 26. Operation of these mines ceased with the expiration of a lease from the Union Improvement Co., of Philadelphia, the land owner of the properties. A dispute arose regarding the amount of royalty to be paid and pending a settlement of this matter, 2,000 men lost employment and the coal output was reduced 3,500 tons a day. Following a recent conference in the Lafayette Building, Philadelphia, Samuel J. Livingston, secretary of the Union Improvement Co., announced that an agreement had been reached and mining would be resumed immediately. Mr. Livingston said that, aside from stoppages due to strikes and holidays, the recent cessation was the first in more than 15 years. He refused to make known the terms of the new agreement.

Bituminous

Altoona—Shortage of cars has reduced the production of coal in the central Pennsylvania district 40 per cent below normal and has seriously handicapped many industries. The shortage is due to lack of motive power and cars and inability to keep up with the repairs on the part of the railroads, while some 15,000 cars sent West with coal at the beginning of the coal strike have not been returned.

WEST VIRGINIA

Beckley—New officers of the Glen White Mining Institute are: Robert F. Roth, president; J. A. Blake, first vice president; A. E. Barrett, second vice president; Geo. N. McLillan, secretary, and Augustus Pilling, treasurer. Quite an interesting talk was given by Superintendent J. A. Blake on the subject of mine haulage.

Williamson—The powder magazine of the Randolph mine in the surburbs of this town blew up recently. James Childers, the mine foreman, who was near the magazine when it exploded, was killed and another employee was seriously hurt. The cause of the explosion has not been determined and the loss is said to be heavy. The explosion shook the town and windows were broken.

Fairmont—At a meeting of the directors of the Consolidation Coal Co. in New York recently, W. L. Andrews was elected vice president of the big corporation. The directors also announced that they have sold the company's holdings in the Coastwise Transportation Co., amounting to 26,046 shares, to W. A. Harriman & Co., bankers of New York, for $250 a share. This is said to mean that the Consolidation company intends to dispose of all its present holdings in shipping interests.

Charleston—Mines in West Virginia took a toll of 22 lives during the month of December, according to a report just made by the West Virginia Department of Mines, and all but ten of the fatal accidents were due to falling slate or coal. Three mine workers were either run over by motors or otherwise fatally injured by them, while two miners met death in mine-car accidents and one was caught in a mining machine. Two deaths also were caused by premature explosions of powder. There were two fatal accidents on the outside of the mine. Raleigh and Logan counties passed McDowell in the largest number of deaths, each having five, McDowell ending with four. The casualties in Fayette County numbered two while in each of the following counties there was one fatality: Braxton, Kanawha, Marion, Marshall, Monongalia and Ohio.

Bluefield—In a gas explosion at the No. 2 mine of the Yukon Pochahontas Coal Co., at Yukon, W. Va., on Jan. 20, two miners were killed and the lives of seven others placed in jeopardy, all through the failure of the company to employ a fire boss, it is charged by the West Virginia Department of Mines. The No. 2 mine is a small mine, only 12 men having been employed there recently. The explosion occurred about 2600 ft. from the entrance to the mine at the face of the main entry, gas having accumulated between the face of the entry and the second break-through from the face. It became necessary to keep the break-through partly open because of the way the main heading was dipping. So far as the Department of Mines was able to determine the canvas stretched across the second break-through had been torn down and evidently was still down on the day of the accident. While seven of the miners who were in the mine at the time the gas exploded (the seven being in the fourth left heading) were able to make their way out of the mine, three were overcome by after damp and had to be carried out.

KENTUCKY

Louisville—Investigations into the coal-car shortage have been started by the state Legislature. It is claimed that during the past three years there has been an increase of 100 per cent in Kentucky coal production, and an increase of ten per cent in number of coal cars. It is said that the railroads have fallen down badly in keeping up with construction work of equipment as well as roads.

Sergent—The Imperial Elkhorn Coal Co. has been incorporated under Delaware laws and has taken over the plant and all the property of the Whitley-Elkhorn Coal Co., at this place, near McRoberts, Letcher County. The purchase includes two operating electrically-equipped mines producing Elkhorn coal on the Lexington & Eastern Ry. U. S. Morris, president of the Superior Colliery Co. will also be president and general manager of the new company. Its offices will be located in New York City and Detroit, Mich. The output of the company will be sold by the Superior Colliery Co., of Detroit, Mich. Considerable additional

acreage has been obtained and it is proposed to start new development work that will necessitate a large outlay of capital.

OHIO

Columbus — The annual stockholders' meeting of the Hocking Valley Products Co., which operates large mines in the Hocking Valley field of Ohio, was held at the Columbus office, Jan. 21. Directors elected were: John G. Bates, Samuel L. Chamberlaine, W. B. Franklin, Norbert C. Heinscheimer, Alexander C. Massen, Langdon P. Marvin, James W. Murphy, Albert M. Polack, Sidney S. Schuyler, James B. Taylor and H. Montague Vickers, all of New York. The board will meet in New York City soon to elect officers for the coming year. Reports received showed that the past year was a good one in both the coal and brick departments, and prospects for the coming year are bright. Robert Taylor, Jr., is resident manager of the concern.

The Final decree in the John H. Winder-John S. Jones law suit over ownership of certain stock of the Sunday Creek Coal Co., has been approved by Federal Judge Sater and the case is now settled. In the final decree the court holds that Winder is not entitled to any of the preferred stock of the company but should be given 15,000 shares of the common stock. This stock has been delivered. The court also held that at no time did it contemplate the appointment of a receiver for the stock of the Sunday Creek Coal Co., or the Steadman Grocery Co., the latter not being a subsidiary of the former company. The court held that Jones is to be reimbursed in the sum of $1,107,826 for moneys advanced. The suit was started about eight months ago by Mr. Winder who desired additional stock in the company.

INDIANA

Terre Haute—Fifty-one mines in the Indiana field were idle Jan. 20 on account of car shortage. Their total daily production capacity is about 45,000 tons. Eighteen of these mines are on the Vandalia R.R. in the Terre Haute-Brazil area, Bicknell field; seventeen on the Chicago & Eastern Illinois, in the Clinton, Brazil and Sullivan fields; fifteen in the Clinton and Linton fields, on the Chicago, Terre Haute & Southeastern R.R.; and one on the Illinois Central, at Dugger. As shown by a report of Jan. 24, car shortage continues to interfere with production in the Indiana coal field, on which date 67 mines, with a daily tonnage of 56,000 were idle. Three mines are reported closed because of labor troubles. At one mine the supply of union powder ran out and the men refused to use non-union powder.

ILLINOIS

Divernon—Coal rights under land in Divernon Township, Sangamon County, belonging to heirs of John A. Vincent, deceased, have been sold to Charles E. Crance for $66,500.

Pana—The Springside mine of the Smith-Lohr Coal Co. in Christian County, has resumed operations after having been idle since Aug. 30, 1919, when fire consumed the surface plant. A new steel tipple has been constructed, 60 men have been given employment and others will be put to work as soon as possible. Officials of the company announce that they have a large number of contracts and the mine will be kept busy.

Duquoin—The first carload of coal has been shipped from a new plant which gives promise of being one of the large coal mines of the state of Illinois. It is located in Sinclair County, northwest of here, and is owned by the Donk Bros. Coal Co., of St. Louis. The mine was recently completed and has a shaft with a dimension of 12 x 24 ft. which is a margin larger than that of the Kathleen mine south of here and operated by the Union Colliery Co. The Donk Bros. mine is said to be planned to have a capacity of 10,000 tons, whereas the Union Colliery mine has only an 8,000-ton capacity. The grade of coal which is of excellent quality was found at a depth of 198 ft. The Donk Bros. Coal Co., has a number of mines in operation in this district and this one will be known as No. 4.

Coal operators from Belleville, headed by L. Senior of that city, recently purchased the mine at Winkle, 15 miles north of here, for a consideration of $202,000 and will operate the mine in the future. The office of the new concern will be maintained in St. Louis. This mine is the same one which was purchased last summer by the Southern Gem Coal Co.

Approximately 5,000 acres of rich coal lands were bought last week by Chicago interests under the name of M. W. Borders, an attorney. It is said that immediate development, or at least within one year from date, will be made on the tract, as the location of the land is directly adjoining the right-of-way of the Davenport, Springfield & Southern Ry., a new road which is being built through southern Illinois. The land is in what is known as Johannisburg and Lively Grove townships.

The operation known as the St. Ellen mine, at O'Fallon, St. Clair County, was recently forced to shutdown as the result of an accident, in which the cage crashed to the bottom of the shaft. While hoisting a car of coal, the rope came loose from the cage, letting it fall to the bottom of the shaft, breaknig the "safetes" on the cage, tearing out many of the guides in the shaft and damaging the timbers at the bottom of the shaft. It was necessary for the men who were at work in the mine at the time, to ascend by means of the air shaft. Several days were required in repairing the damage.

WASHINGTON

Bremerton—A considerable body of coal is expected soon to be proved on the Holmes property along the beach road west of Port Orchard, Puget Sound. A 40-ft. tunnel has been driven and a shaft is now being sunk to prove the coal. It is claimed an 18-ft. seam of lignite will be developed by these operations. It is well known that coal exists in this section as shown by wells; pieces of coal from such sources, when tested have been found to show up well.

Obituary

Willis E. Martin, the treasurer of the H. K. Porter Co., of Pittsburgh, Pa., died on Jan. 12, after a prolonged illness. Mr. Martin had been connected with this company for 44 years.

E. Fred Wood, formerly vice president of the International Nickel Co., died suddenly at New York City on Jan. 5, in the sixty-second year of his age. Mr. Wood was born in Milwaukee on Aug. 28, 1858. He was educated in the public schools of his native city and later entered the University of Michigan. After leaving college he studied metallurgy and made extensive trips through the various mining camps of the West, living for a year at Leadville and in other mining towns where he obtained his practical experience. He later entered the employ of the Carnegie Steel Co. and held the position of assistant general superintendent of the Homestead plant for a number of years and was one of the so-called "Carnegie veteran associates." He joined the International Nickel Co., upon its organization, becoming first vice president of the company and a member of the board of directors and of its executive committee; he was an important factor in developing the mining, smelting and refining business of the concern. When the United States entered the war, Mr. Wood became a member of the Committee on Production of the War Industries Board. He was keenly interested in traveling, and had the unique distinction of having traveled around the world twice in one year. He is survived by his wife, and by one daughter, Mrs. Hilda Wood Allen.

Coming Meetings

Material Handling Machinery Manufacturers Association has changed the date of its convention from Jan. 29 and 30 to Feb. 26 and 27, at the Waldorf Astoria Hotel New York City. Secretary, Z. W. Carter, 35 West 39th St., New York City.

Canadian Mining Institute will hold its annual meeting at the King Edward Hotel, Toronto, Ontario, Canada, on March 8, 9 and 10, 1920. Secretary, H. Mortimer-Lamb, 503 Drummond Building, Montreal, Quebec, Canada.

New York State Retail Coal Merchants Association will hold its annual meeting Feb. 26 or 27, the final date depending upon arrangements made with the speakers selected. Executive secretary, G. W. Woodside, Albany, N. Y.

American Institute of Mining and Metallurgical Engineers will hold its annual meeting Feb. 16, 17, 18 and 19, at the Engineering Societies Building, 29 West 39th St., New York City. Secretary, Bradley Stoughton, Engineering Societies Building, New York City.

American Chemical Society will hold its annual meeting at St. Louis, Mo., April 13, 14, 15 and 16. Secretary, Dr. Charles L. Parsons, 1709 G St., N. W., Washington, D. C.

Personals

Edward Graff has been appointed general manager of all the operations of the New River Co. in Fayette and Raleigh counties, succeeding a Mr. Porter.

George Scott has accepted a position as mine manager of the McCraney mine at Coal Valley, Ill. The mine will be considerably enlarged.

J. K. Taggart, who was the superintendent of the Stonega Coal & Coke Co., at Exeter, Va., has resigned to become general manager of the Northern Coal Co. at Norton, Va.

E. H. Carner has been appointed manager of the Boston office of the Consolidation Coal Co., Inc., in place of R. C. Gillespie, resigned. Mr. Carner's headquarters are at 50 Congress St., Boston.

A. E. Oliver, formerly superintendent of the Pinnacle mine of the Victoria American Fuel Co., at Oak Creek, Col., has resigned to take charge of the mines of the Marshell Fuel Co., of Denver, Col.

James A. Reilly, of the Queen City Coal Co., Cincinnati, Ohio, which was recently purchased by the Island Creek Coal Co., has been made the Cincinnati superintendent of the holdings of the latter corporation.

Chris MacTaggart has been appointed manager of the Monongah Coal Co. operating in the Fairmont field, Mr. MacTaggart having severed his connection with the Carper Foundry-Machine Works for which he was manager.

Robert Lambie, district mine inspector for the Eleventh district of West Virginia, has resigned to accept a position with the New River Co., at MacDonald, in the New River field. Mr. Lambie's resignation was to become effective Feb. 1.

A. A. Mitchell who has been superintendent of the Fort Hill and the Paul works of the W. J. Rainey interests for the past five years, has been promoted to the position of superintendent of the Revere, Pa., works of the same company to succeed Clarence Patterson, resigned.

Robert Lilly, in charge of mine-rescue stations for the West Virginia Department of Mines, has been appointed a district mine inspector for the Eleventh district, effective Feb. 1. He has been succeeded by **H. S. Black**, formerly connected with the U. S. Bureau of Mines.

S. A. Westenhover, of Martinsburg, has been appointed district mine inspector for the eastern Pan Handle, it has been announced by W. J. Heatherman, Chief of the West Virginia Department of Mines, his appointment to become effective Feb. 1. He succeeds Clyde Smith.

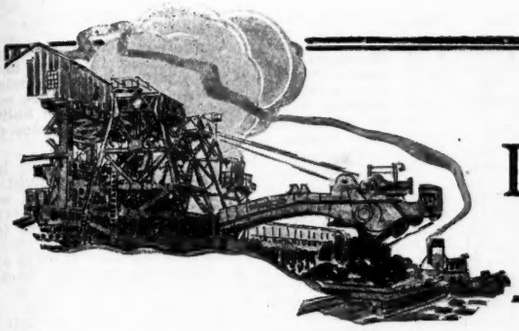
J. H. Mandt has been appointed, it is announced, general manager of the Elkhorn Piney Mining Co., with headquarters at Stanaford, W. Va. He succeeds **C. M. Binford**, who resigned from that post to accept an important executive position with the Main Island Creek Coal Co., being associated with Colonel James Sterrett.

Frank R. Bacon, president of the Cutler-Hammer Mfg. Co., of Milwaukee, Wis., has been elected chairman of the American Constitutional League. This league was formed by the influential business men of Milwaukee to take up Americanization work, which will embrace all forms of education and publicity in favor of Americanization and in opposition to all radical doctrines, which seek to overthrow our existing Government.

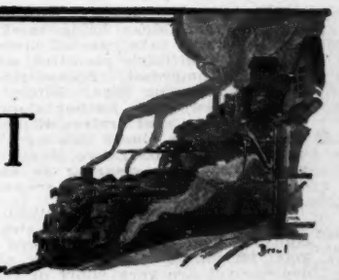
Frank H. Brooks has been appointed superintendent at mines Nos. 28, 36, 47 and 92 of the Consolidation Coal Co., his appointment having become effective Jan. 15. He succeeded W. C. McMahon, resigned. The new superintendent was formerly mine foreman at Wyatt, W. Va. Mr. Brooks has long been in the employ of the Consolidation Co.

F. Y. Casey, formerly connected with H. H. Lineaweaver & Co., has resigned to become the Philadelphia representative of W. J. Rainey with headquarters in the Real Estate Trust Building, Philadelphia, Pa., in the place of **A. F. Kempe**, who has been made assistant manager of sales and transferred to the general offices of this company in New York.

George Arbuckle, formerly with the Victor Colliery Co., at Tamaroa, Ill., and until lately mine manager for the large Kathleen mine of the Union Colliery Co., at Dowell, five miles south of Duquoin, Ill., has resigned and accepted a position with the Kanawha Fuel Co., of Duquoin. **William Stephenson**, formerly of Carterville, has succeeded Mr. Arbuckle at Dowell.



MARKET DEPARTMENT



Weekly Review

Car Shortage Continues—Fuel Shortage Also Prevails in Some Parts of the Country—Bunkering Restrictions Modified—Demand for Anthracite Good—Prices Continue as Before

IN FACE of a continued car shortage which has reached big proportions, the mine operators are unable to meet the increasing demand for their output. Part time operation of the mines naturally continued. The districts that have been affected the most severely are certain regions of West Virginia, Kentucky and Tennessee. In the latter two districts, it is said that the condition as it now exists is possibly the worst ever experienced.

The demand for anthracite in the East is so great that it will prevent movement of much of the coal that might have been sent Westward. Because of the uncertainty of the outcome of deliberations at Washington, and also probably because of the coming meeting between the anthracite miners and operators whose wage agreement expires in March, there has been more buying, or attempts to buy—some of the buyers being successful and other buyers not.

The fuel shortage which prevails throughout parts of the country has become more and more critical, especially at the iron and steel centers, where production has fallen off to such an extent as to necessitate many furnaces shutting down. Though public utilities and other essentials have not arrived at a critical point they have been running on a reserve which rapidly decreases and is rather hard to replenish. It is worthy of note that Syracuse University shut down temporarily, thus causing many young men to lose considerable time in the progress of their education.

Because of a modification in restrictions, allowing the bunkering of vessels to outward destinations, the export trade has picked up slightly and such ships have been well taken care of in view of the fact that a better price can be had for coal sold in this manner. However, there is another difficulty which confronts the exporter, namely, the money market. Rates of exchange are about as low as they ever have been. For example, the German mark is worth at this writing only one cent.

Conditions in the West, though this region is facing a serious situation, are made more favorable because of the supplies of anthracite now on hand. Railroads are still confiscating coal and will continue to do so until they think conditions are more favorable.

Prices continue unchanged and are still at the Government figure. Trade associations and similar organizations are being besieged with inquiries relative to ascertaining who should absorb the miners' 14 per cent increase, the operator or consumer.

While a 50 to 60 per cent car supply prevailed in the coke region during the past week, it fell to as low as 20 per cent for one day. Railroads have recently sent to all mine owners a form sheet which is to be filled out by all operators. When these have been returned to the administration, the redistribution of cars will be made in order to alleviate conditions, which is earnestly hoped for.

Stocking in the yards in the coke regions has become a necessity for more coke has been made than has been carried away. Approximately 6,000 tons, the same as for the preceding week, has been added to the stock piles. These stock piles would soon be swept clean if there were cars enough to carry the coke to gas, iron and steel plants that are now running on a small reserve.

WEEKLY PRODUCTION

Bad weather accentuating the shortage of cars appears to have been the cause of a decline of 737,000 tons in the production of soft coal during the week ended Jan. 24, states the weekly report on the production of bituminous coal, anthracite, and beehive coke compiled by the Geological Survey, Department of the Interior, Jan. 31, 1920. The total output, including lignite and coal made into coke, is estimated at 10,772,000 net tons, a decrease of 6.8 per cent when compared with the preceding week.

Exports overseas during December are reported at 182,064 net tons, a decrease of 48,262 tons when compared with November. December overseas exports were thus the smallest of the year, reflecting the embargoes imposed after the strike began. Exports in October had been 1,526,187 net tons.

Total overseas exports for the year 1918 from the ports covered by the operations of the Exchange (New York, Philadelphia, Baltimore, Hampton Roads, and Charleston) amounted to 8,292,414 net tons (7,403,941 gross). In spite of the strike this was the largest in any year of American history.

Coal moved to New England via tide during December is reported as 674,000 net tons. This was less than the November tonnage but greater than October. Compared with December last year it was a decrease of 202,000 tons.

Atlantic Seaboard

BOSTON

Railroad confiscations general. Continued cold also has bearing. Light receipts. Little coal available at New York piers. Price situation one of great difficulty. Ground for much uneasiness over spring outlook. Wagon-mine coal appears. Anthracite deliveries interrupted. Renewed inquiry for steam sizes.

Bituminous—The wholesale commandeering of steam coal by the railroads recently has broken all records. Never was a time when both shippers and consignees were so much at sea over the volume of transit. Cars started from the mines mean nothing, so large a proportion is taken en route for locomotive supply both by delivering roads and by the lines that intervene. Short car supply has something to do with it but the underlying cause is the attempt of the railroads last spring to buy in many cases at less than cost.

Receipts are light, both water and all-rail. The slow movement because of heavy weather and delays in freeing cars are assumed to be responsible for short car supply at the mines. At this writing car shortage is very pronounced and doubtless the heavy movement West early in December accounts also for the lack of empties. There are those in the trade who look for an improvement within a fortnight, but there are others who hold out only gloomy prospects. Much depends upon the attitude of the railroads.

Anthracite—Shipments have lately been very much interrupted. The New Haven R.R. has been embargoed since Jan. 19 because of congestion at the transfer points and ice in the Delaware and the frozen condition of cars at the piers have each contributed to delays in shipment. There seems also to be an impression at first hand that New England has been given a liberal share and that there are other sections where, in proportion, there is more tonnage due.

Developments in bituminous have caused a scattering inquiry for the junior-steam sizes. Prices on these coals are still low, relatively, and it is expected an extra tonnage will be moved the next few weeks.

NEW YORK

All anthracite sizes in excellent demand, chestnut and stove being most unpopular, but shipments take care of current demand. Egg easy and fairly plentiful, while pea has stiffened somewhat. Steam sizes show no snap and buying lags. Bituminous situation at New York harbor shows improvement as more coal arrives at piers. Bunkering restrictions placed this week but all but one rescinded after two days. Boat congestion at piers clearing as more coal is dumped and striking tugs resume work.

Anthracite—The local anthracite market is quiet but very firm. A steady market continues on all the prepared sizes and good buying has been taking place. Most dealers yet are very short of chestnut and stove sizes and are calling upon shippers for these two sizes in preference to others. Egg has been somewhat slow in moving, but dealers have been persuaded to take a certain percentage of egg with orders of stove and this splitting has kept the market in a well balanced state.

Current quotations for company coals, per gross tons, at the mines and f.o.b. Tidewater, at the lower ports are as follows:

	Mine	F. O. B. Tidewater
Broken	$5.95	$7.80
Egg	6.35	8.20
Stove	6.60	8.45
Chestnut	6.70	8.55
Pea	5.30	7.05
Buckwheat	3.40	5.15
Rice	2.75	4.50
Barley	2.25	4.00
Boiler	2.50	4.25

Quotations for domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates.

Bituminous—The bituminous market which has been in a very uncertain position during the past two months, is beginning to show signs of improvement. The main difficulty at tidewater has been the very limited amount of coal on hand, and this week a very pronounced improvement in the number of loaded cars on hand at the piers is shown. On a certain day this week between 3,500 and 4,000 cars were on hand, whereas the average for the past month has been around 2,500.

To protect business in this territory, on last Wednesday bunkering restrictions were applied, which if carried out would have radically cut the volume of coal moving into the bunker trade.

PHILADELPHIA

Anthracite trade eases slightly due to milder weather. Nut size leads in demand, closely followed by stove. Egg position better, but pea fails to improve. Retail profits shrink. Look to spring for relief. Little life to steam sizes. Buckwheat fairly active; rice and barley dull. Bituminous unimproved. Car supply causes light shipments. Coke scarce.

Anthracite. With a softening of weatner conditions there is just a least tendency in the same direction in the coal trade. The dealers are not so vigorous in their calls upon the shippers for increased shipments, although the demand for stove and nut is extremely heavy. Usually when the retailer goes after his shipper for more of these sizes the latter takes the opportunity to urge more pea coal, which size the dealers are heartily tired of now.

It is not believed that there will be any real break in the retail trade for some weeks yet, and possibly not then. February is all before the trade and this month rarely has failed in the last ten years or more to be the most wintry of all the season and heavy buying is looked for at that time. In fact the impression is growing that the trade is going to be real active right up to April, as it is expected that the discussion of the wage question with the miners is going to keep the public in the buying attitude.

The receipts of prepared sizes have been in fair volume, especially since the question of car shortage has failed to affect the anthracite trade very much. This situation has been helped out by the fact that a large number of the small wooden coal cars which were retired and stored on the siding during the war have been released for the coal trade. This action was more welcome to the shippers than it was to the retailers, as it enables the operators to spread their tonnage of the favorite sizes.

The circular prices in effect for the month of February are as follows, being per gross ton f.o.b. cars mines and f.o.b. Port Richmond:

	Line	Tide
Broken	$5.95	$7.80
Egg	6.35	8.20
Stove	6.60	8.45
Nut	6.70	8.55
Pea	5.30	6.90
Buckwheat	3.40	4.45
Rice	2.75	3.65
Boiler	2.50	3.50
Barley	2.25	3.15

Bituminous. There is not the least sign of improvement in the bituminous trade. The one cry of the producers is for cars and yet they fail to come. All coal that is produced is being applied on regular business and the small buyer usually accustomed to have his wants filled as the need arises is in a somewhat ticklish position. The resumption of spot business seems to be as far off as ever.

Eastern-Inland

PITTSBURGH

Production scarcely increased, but consumers receive more coal. Many cars out of commission through their coal contents being frozen.

The past week has witnessed a slight improvement in car supplies at coal mines, but not enough to effect any appreciable change in the production. Line consumers are, however, better supplied with coal by reason of other influences. The movement for export is practically stopped, partly because permits are granted very sparingly, but chiefly because the extra price allowed on export sales is suspended, as of Jan. 27. A considerable quantity of coal is thus released for the line trade. In addition there have been the embargoes against several of the lake ports, resulting in the reconsignment of coal, to line consumers. Thus the steel mills are better off than a week ago although the coal operators are not.

There is additional evidence that the shortage in the placement of empties at coal mines is not due wholly or largely to there not being enough freight cars in the country, if all could be used. As has been reported from time to time, the cars that went far afield during the cessation of work at the union mines are not all back yet, but there has lately been another influence in addition, in that there have been large numbers of loaded cars in Pennsylvania and Ohio with the coal frozen solid, and scarcely any means at all for thawing, so that relief may not come until mild weather intervenes.

It is somewhat less difficult to buy coal in the open market, there being a moderate movement, at Government price limits, which remain at $2.10 for slack, $2.35 for mine-run and $2.60 for screened, per net ton at ovens, with a 15c. brokerage allowance, to be paid by the buyer, in some instances.

COLUMBUS

There is a good demand for all grades in Ohio territory, but production is still curtailed by continued car shortage. Domestic demand is the strongest feature at this time. No hopes for improvement in the car supply is held out.

With salesmen called off the road and no effort being put forth in the selling end of the business, the Ohio coal trade can be said to depend almost entirely on the car supply. Operators and jobbers are devoting their attention to speeding shipments and to tracing cars that have been diverted under the railroad administration. The demand readily absorbs all of the coal produced in the state. Domestic demand is the strongest feature, although there is a good healthy call for all steam sizes. On the whole the coal trade is at the mercy of the railroads with no immediate hope of improvement as far as increased railroad facilities are concerned.

Retail demand is strong in every section. Dealers are urging immediate shipment on all orders booked as in many cases their stocks are entirely exhausted. Pocahontas mine-run is coming in small quantities and lump can not be obtained from that district. West Virginia splints are selling well and a fair tonnage is arriving. The large bulk of the coal sold in this district comes from Ohio mines however. Retail prices are firm at the levels which have maintained for some time. Hocking lump sells at $6.25 while mine-run is quoted at $5.75@$6. Pomeroy Lump sells at $6.50 delivered. Jackson lump is around $7. West Virginia grades are quoted at $7 for lump and $6.75 for mine-run.

CINCINNATI

Lifting of embargoes at Northern and Western points caused coal to move more freely through Cincinnati railroad terminal last week. At no one time was there congestion here, the fault being in the ability of connections to take the coal from the coal roads.

The immense amount of coal that has come to this terminal for a fortnight is really the letting go of a "dam," and was coal mined as long ago as three weeks. Since this was mined, however, there has been a steady decline in production in the fields served by the Chesapeake & Ohio and the Louisville & Nashville so that to-day production runs from 50 to as low as 30 per cent due to the lack of coal cars.

This low production will soon be felt in the territory served by these mines. However, no hardship will be experienced here because of the confiscation power given to the Cincinnati Coal Distributing Committee. In the New River district the car supply Jan. 25 was but 40 per cent.

During the past week coal has been coming into the railroad terminal at a rate of 50,000 tons a day or the equivalent of a four-day supply. For some time the Chesapeake & Ohio has been bringing in 600 cars a day, while the other seven railroads entering here have been registering a smaller number. Coal arriving by river has been far below normal during the past two weeks. While part of the coal that arrives in Cincinnati is taken here for domestic and commercial purposes, the bulk of it is being sent to points beyond.

Operators and distributors took exception to a report handed out last week by the Central Coal Committee dealing with the payment for coal during the recent strike of the miners. The part of the report that is criticised follows: "While coal was moved expeditiously to all points there was nevertheless an unavoidable delay in getting it to the ultimate consumer which resulted in apprehension on the part of the shippers that notices would be received too late for them to render bills to the divertee and receive payment within the same period.

Southern

BIRMINGHAM

Movement and production affected to some extent by car shortage. Inquiry good for all grades, both steam and domestic, but consumers are easier on stocks and pressure for deliveries not so great as it has been.

Aside from the effects of the car shortage, which is retarding production and the movement of coal to some extent, particularly on the lines of the Louisville & Nashville R.R., trade conditions under price restrictions have been as satisfactory as could be expected. The demand for all grades of steam is good and sufficient to keep all the coal moving as mined. Sales are confined to spot business mostly, a few short-time contracts being reported, but the uncertainty of developments affecting the industry are such as to render the entering into of long contracts inadvisable.

Domestic demand is easier with the continuation of warm and unseasonable weather, and receipts are sufficient to meet the ordinary demands of the trade, but the mines are not producing sufficient tonnage to meet contract deliveries.

The sharp advance in the price of fuel oils and the difficulty of securing adequate supply is expected to prove advantageous to the coal industry in this district, which has suffered the loss of probably 1,000,000 tons per year from plants which turned to oil for fuel, and which are now considering the use of coal again in many instances. The Seaboard Air Line Ry., which was reported to be negotiating with Mexican oil interests for a fuel supply for its Florida division, is understood to have abandoned the proposition and will continue the use of coal. The conditions in the oil fields is expected to have the effect of placing a damper on further conversion of power plants to the use of oil as fuel.

LOUISVILLE

Demand strong for all grades, with production still short due to car shortage. Operators making hard fight for cars, but getting little but promises.

Demand for all grades of coal continues strong, retailers reporting a good demand, and much trouble in placing orders for lump, while jobbers report very little coal available. Production is averaging be-

tween two and three days a week in the Hazard and Harlan fields, and sections supplied by the Louisville & Nashville, R.R., while other sections report better facilities where not dependent on the Louisville & Nashville. The latter railroad reports that it is 5,000 cars short of its net ownership of equipment, figuring company-owned and foreign cars on its lines.

A committee of Kentucky and Tennessee coal men spent several days in Washington last week, and held a conference with Congressmen, Railroad Administration officials, etc., on Friday, but with the exception of promises for better delivery of empties, there hasn't been much improvement.

Coal operators are somewhat put out with wild reports relative to car supply being normal. An Associated Press dispatch out of Washington on Jan. 20, stated that Railroad Administration officials reported that there was no longer a car shortage, while the Geological Survey was reported to have issued a statement to the effect that production in the Northwest and West had increased so rapidly that many mines were idle due to lack of orders. It is felt that such reports going to consumers makes it especially hard on the operator, especially in cases where he is unable to ship on low priced contracts.

Mines are not accepting much new business just now, especially at Government prices, and are content to catch up with heavy orders on hand before taking much new business, as the future is in doubt, and there is a possible chance of Federal regulation being removed, especially in event the peace treaty is ever signed, which would knock out the Lever Act.

It is admitted that the car shortage in Kentucky and Tennessee is the worst in the country, but indications are that it is growing bad elsewhere. Demand is taking all production, and operators claim that even with full facilities it would take some little time to fill up the country again.

Lake Region

DETROIT

With little bituminous or anthracite arriving, Detroit's supply of steam and domestic coal is so low as to cause anxiety.

Bituminous—Officers of the Detroit Coal Exchange are working in the effort to avert a serious coal shortage that is now menacing Detroit. With a number of manufacturing establishments rapidly approaching the end of reserves and the yards of several dealers already barren of fuel, very little bituminous for either steam or domestic use is being brought into this city.

The cutting off of supply is due in part, the jobbers say, to the action of the Railroad Administration during the strike, when hundreds of cars of coal consigned to Detroit were confiscated, and sent to other places. Reports are coming to the dealers that some of these shipments are still in cars on tracks, instead of the cars having been unloaded, and sent back to the mines, the result being a decrease in available car supply.

Operation of the embargo, raised earlier in the year against freight consigned to Detroit, has produced a serious curtailment in supply. Officers of the Detroit Coal Exchange assert that the Regional Director of railroads in Cincinnati has been seizing, and holding back nearly all the coal destined for Detroit. Much of this coal was sent to other points while a large part of it is still in cars in and around Cincinnati, where it is reported the coal supply is greater than the city's requirements justify.

Following the removal of the embargo on Jan. 23, assurances came to Detroit dealers that the Railroad Administration would rush shipments of bituminous to the local market. Three days later the coal exchange announced that coal bound for Detroit is being held back and diverted in Toledo, apparantly without regard to the lifting of the embargo. A local firm operating five yards received one car in three days, while another firm which ordinarly distributes two cars a day, received no shipments in the six days ending Jan. 26.

Anthracite—Owing to the curtailment of shipments of anthracite, resulting from the recent railroad embargo and the heavy consumption during the extended period of low temperature this month, stocks in the yards of most dealers are small and in the case of some have been wiped out. The heavy fall of snow, Jan. 23-24, is reported to have seriously retarded the movement of shipments bound for Detroit.

CLEVELAND

Receipts of all grades of coal continue barely equal to spot requirements, with outlook for improvement good. End of government control of prices, and consequently increased prices, is expected by the local trade about March 1.

Bituminous—Minimum requirements of Cleveland and northern Ohio are just about being met. Closing of some thirty public schools and several score of factories because of a lack of coal has been threatened several times in the past week, but enough coal has come forward to obviate all this. Bituminous coal, and especially steam-coal grades, are decidedly scarce, but actual operations of factories in the Cleveland district are proof that famine conditions do not exist. The condition was most serious in the first part of last week, but the moderating temperature and slightly increased receipts, believed due to shutting down on exporting, have ameliorated the situation noticeably. It still may be said within Cleveland proper that not a factory nor school nor institution of any kind has lost one hour through lack of coal. Practically all have not more than a few days', if one day's, supply ahead, but the threatened closings always have been averted at the last minute.

Entire blame is placed upon the Railroad Administration. Labor forces at southern and eastern Ohio mines are 25 per cent under normal, but even so 30 per cent operation is considered high at present. Getting empty cars back to the mines continues the sticking point. Congestion in Ohio seems worst at the Toledo gateway. An embargo on all shipments out of Cleveland on all roads except the Pennsylvania has been in effect a week, and has cut down fuel requirements somewhat. Operators and the trade do not look for improvement until spring, and say whatever relief comes will be due to milder weather. Demand for steam coal is probably five times receipts, and prices are out of sight.

Anthracite and Pocahontas—Slight relief is noted in the Pocahontas situation and dealers now are taking business subject to delay of two to three weeks in delivery. Last week they would not promise any delivery. Improvement in anthracite is less marked. Domestic consumers are clamoring for both grades, feeling that prices will decrease little if any in the summer and willing to take all they can get now and held it over until next winter.

Lake Trade—Coal appears to be moving off the Upper Lake docks as fast as the railroads can handle it, and the docks undoubtedly will be clean by the opening of navigation. In fact, some large all-rail shipments will be necessary to meet fuel needs of the upper lake regions. So heavy demands, however, are piling up in the Lower Lake regions that it is not believed the beginning of the season will see as many cargoes floated as in previous seasons. In April, 1919, the Lake trade took 860,979 tons of bituminous coal; the prediction is that April, 1920, will not come near this mark owing to industrial demand.

Retail prices of coal per net ton delivered in Cleveland are:

Anthracite—Egg, $12.20@12.40; chestnut, $12.50@12.70; grate, $12,20@12.40; and stove, $12.40@12.60.

Pocahontas — Forked, $10.50@11.00; shoveled lump, $9.00@9.25; and mine-run, $8.00@8.25.

Domestic bituminous — West Virginia splint, $8.30; No. 8 Pittsburgh, $6.85@7.00; Massillon lump, $7.40@7.65; Cannel lump,$11.00; and Coshocton lump, $7.35.

Steam coal—No. 6 slack, $5.20@5.40; No. 8 slack, $5.20@5.50; Youghiogheny slack, $5.25@5.50; No. 8 ¾-in. lump, $6.00@6.25; No. 6 mine-run, 5.25@5.50; and No. 8 mine-run, $5.85@6.00.

BUFFALO

Still the coal confiscation. Car shortage increases. The late heavy storm tied them up so that coal nearly gave out. Anthracite not so plentiful.

Bituminous—The situation turns largely on the car supply, as affected by the big storm. The cars were scarce at the outset and then there came a storm with all the possible adverse conditions, snow, wind and cold. No wonder that the trains stood still. There has been a much better state of things since, but the time lost was so great and the lead over a coal famine so small that some localities had to cut down consumption in every possible way. Central and northern New York suffered most. Side roads did not run even passenger trains for days.

It is not expected that the bituminous shortage can be made up till the cold weather and the snow are gone. Few consumers have any surplus and it is a matter of only two or three days' supply often. If there is no more extreme weather it is likely that the city will pull through in some way, but all shippers are looking after the coal on hand and favoring as much as they can those who are out.

At the same time it is reported that there is a large amount of coal, hard as well as soft, in cars, waiting for the roads to move it. Though the snow is down a trifle and the weather is again only moderately cold, the roads themselves are in a sort of panic, taking often all the coal that a shipper gets. Some of the most successful jobbers in the city are quite discouraged over the situation. The latest report is that at least some of them have arrived at an understanding with the roads, so that only a part of a shipment will be taken.

Some are of the opinion that the roads are very short of fuel, while others claim that a sort of conspiracy exists among the operators to mismanage things in order to give the government handling a black eye. Many opinions are heard to the effect that the roads will never return to normal efficiency till private ownership is resumed. Buffalo has a special shippers' committee that looks after local car movements and it is doing good work.

Coal prices are not steady. Most shippers are sticking to the government prices, but there are others ready to ask more if a consumer is found to be in straits. The regulation prices are of course the only legitimate ones, $4.70 for Allegheny Valley sizes, $4.50 for Pittsburgh and No. 8 lump and three-quarter, $4.25 for all mine-run and slack, $4.60 for Pennsylvania smokeless, $4.70 for smithing, all per net ton, f.o.b. Buffalo.

Anthracite—The supply has been cut down of late, mostly on account of the slow moving of cars. Reports from the mining districts state that all available track room is filled with loaded cars and with the locomotives knocked out by the weather. The weather has now become much milder and the supply ought to run up fast. The consumers are much better supplied than those in the bituminous section, and it is expected that the surplus will last till the cold weather is mostly gone.

The Canadian supply is not as good as ours, but it is not bad, and is not likely to be any worse than at present, supposing that there are no more such storms as the one of Jan. 23. In fact this section has seldom had a worse one, for snow, cold and wind all came in together. Shippers say that as soon as the sunny days begin to arrive the demand is sure to drop off. Still the consumption is about twice that of such a winter as the last.

Some independent coal is still selling and the premium is increasing but it has not been of much amount since the lakes are closed. No report has been received from the Upper Lakes, but the supply was so much above the average that it ought to be sufficient. With an ordinary winter there would have been a large amount left over. All standard prices remain as before.

TORONTO

Market active—Sufficient anthracite on hand for present demand but bituminous scarce. Shipments delayed by traffic congestion at the border. Serious shortage feared.

There has been an active demand for both anthracite and bituminous, owing to the continued cold weather, but so far there has been little or no hardship on account of shortage, as this winter the public have been better prepared for cold snaps than in previous seasons.

There is enough hard coal on hand for present requirements, but bituminous is scarce and shipments are arriving slowly. Many consignments being delayed by freight congestion at the border. Unless the situation is speedily relieved the shortage threatens to become serious. Prices for soft coal are somewhat fluctuating with a decidedly upward tendency.

Quotations for short tons are as follows:

Retail—	
Anthracite egg, stove, nut, and grate	$12.75
Pea	11.25
Bituminous steam	10.00
Slack	9.00
Domestic lump	10.00
Cannel	12.50
Wholesale, f.o.b. cars at destination—	
Three-quarter lump	6.75
Slack	6.00

Unless this city receives more coal from the United States, there is a possibility of a decrease in production, especially in large manufacturing plants.

Middle West

MID-WEST REVIEW

If the reports brought in from 'he country are to be believed, the Middle West is facing a very serious situation. Illinois and Indiana mines are seriously handicapped on account of the car shortage, and, added to this, is the fact that shipments are delayed in transit.

Retail dealers complain that coal shipped them as far back as December is still in transit, and that the railroads are often unable to give any record of the shipments in question. Even before this situation developed there was a coal shortage practically everywhere in the Middle West, except Chicago, so it can be readily determined just how serious is the present state of affairs. The retail trade is up against it as well as the steam users.

The bigger factories seem to be suffering more than the smaller ones. Perhaps the reason for this is that the average purchasing agent for a large manufacturing concern is inclined to believe himself infallible, while the purchasing agents of the smaller concerns are a little more humble and inclined to take advice.

The question of car supply, from early reports, is still far from satisfactory. Indiana has suffered more than Illinois so far this week, but whether or not this will hold true for the balance of the week remains to be seen. In Illinois the supply on the Chicago, Burlington & Quincy R.R. appears to be as good as any. The Illinois Central and the Chicago & Eastern Illinois R.R. and others are not so fortunate. Illinois miners will probably receive a 60 to 70 per cent car supply this week, while Indiana will run even lower.

Nearly all the mines in this territory, except a few in Franklin County, are now booking orders at the Government prices. The market is in a good vigorous condition.

CHICAGO

Dealers and steam plants in this city have not as much coal on hand as was thought.

A week ago that it was hard to sell coal here and a number of shippers were called upon to divert coal already rolling towards Chicago. Now the situation has changed and consumers are calling for more shipments.

There is a great demand at this writing for all grades of Eastern coal—particularly gas and byproduct coal. Shipments are moving so slowly from the East, and the car shortage is so serious in West Virginia and eastern Kentucky that a number of gas plants, as well as malleable foundries, are in bad shape—such bad shape that some will have to close down if assistance is not forthcoming soon.

ILLINOIS

	F.o.b. Per Ton	Chicago Rate to
Southern Illinois—		
Franklin, Saline and Williamson Counties, etc.		
Prepared sizes	$2.55	$1.32
Mine-run	2.35	1.55
Screenings	2.05	1.55
Central Illinois—		
Springeld District:		
Prepared sizes	$2.55	1.32
Mine-run	2.35	1.32
Screenings	2.05	1.32
Northern Illinois—		
Prepared sizes	$3.25	$1.24
Mine-run	3.00	1.24
Screenings	2.75	1.24
Indiana		
Clinton Fourth Vein District—		
Prepared sizes	$2.55	$1.27
Mine-run	2.35	1.27
Screenings	2.05	1.27
Brazil Block—		
Prepared sizes	$3.60	$1.27
Mine-run	3.30	1.27
Screenings	2.05	1.27
Knox County, Fifth Vein District—		
Prepared sizes	$2.55	$1.37
Mine-run	2.35	1.37
Screenings	2.05	1.37
West Virginia		
New River and Pocahontas—		
Prepared sizes	$2.60	$2.60
Mine-run	2.35	2.60
Splint—		
Prepared sizes	$2.75 to $3.00	$2.60

ST. LOUIS

The car shortage is appalling. ailroads taking all coal. Movement of equipment unusually slow. Demand everywhere for all grades and sizes far exceeds supply. Weather seasonable.

Local conditions in St. Louis are in good shape, but the demand for both steam and domestic far exceeds the supply in Mt. Olive and Standard. There is a light tonnage of Carterville coming in—so light that it is not a factor in the local situation.

In the Standard field the trunk-line carriers have prominently displayed the same old incompetent management. No storage fuel is ahead and there remains failure to move either loads or empties. A few days in this week every trunk line West of St. Louis was embargoed by the delivery lines East of the river. This helps St. Louis locally, but the outside territory is actually suffering for fuel. Two days a week is good working time now on account of car supply. On the short coal roads three and four days has been the rule. The same condition governs in the Mt. Olive field.

There is much dissatisfaction among the miners over the fizzled-out Railroad Administration for the shortage of cars.

In these fields there is no promise of better conditions in the immediate future If severe weather continues the situation will actually be acute.

In the Carterville field of Williamson and Franklin Counties the car shortage is serious. From Jan. 21 to Jan. 30 not one car of domestic coal was listed as being loaded on the Missouri Pacific lines with a total of about 25 mines.

The car supply was for about two days a week and the railroad took all of the coal. Industries on the Missouri Pacific R.R. are in a sorry plight, for there are no rates from other mines to a big Missouri Pacific territory. This has caused a growing shortage of dissatisfied men at many places. The Chicago Burlington & Quincy is supplying the most equipment and shows best movement.

An investigation as to the prices charged by the Franklin County Association members is being arranged for through the Attorney-General's office at Washington for alleged violation of the anti-trust laws and Fuel Administration rules.

A little anthracite still moves in, with no smokeless and nothing from the Arkansas fields. Coke is in fair demand throughout the country sections and is apparently growing in demand in St. Louis proper. Prices same as last week on wholesale.

The retail prices on coal delivered f.o.b. sidewalk are:

Carterville lump egg and nut	$6.20
Mt. Olive "	5.70
Standard "	5.45

MILWAUKEE

Shortage of soft coal beginning to cause inconvenience. Hard coal in good supply, however. Prices unchanged, except on Illinois coal, which is selling from 35c. up to meet miners' recent advance.

The coal situation at Milwaukee is assuming a serious phase, because of a shortage of soft coal, and dealers are finding it difficult to meet contracts and at the same time supply the transient trade. All soft coal is practically sold up, the stocks in evidence on the docks being held to protect contract obligations.

Under the circumstances dealers are forced to depend upon rail consignments for relief. With embargoes at Chicago and in the East because of congested tracks the outlook in this direction is not promising. In some instances coal en route to Milwaukee has been confiscated by railroads for their own use.

Fortunately hard coal is in better supply than it has been in several years. Prices continue unchanged, but an advance on future rail supplies is looked for. Illinois coal demands a premium of 35c. per ton since the recent advance in miners' wages.

Anthracite

Chestnut	$12.70
Stove	12.60
Egg	12.40
Pea	11.20
Buckwheat	9.75

Bituminous

West Virginia, splint screened	8.00
Hi-Heat	8.00
Hocking, screened	7.75
Pittsburgh, screened	7.75
Pocahontas mine-run	8.75
Pocahontas, screened	11.00
Cheerful Chunks	9.50
Smithing	8.75
Cannel	12.00

Steam Coal

Youghiogheny, screened	7.00
Youghiogheny, pile run	6.75
Youghiogheny, screenings	5.75
Pittsburgh, screened	6.75
Pittsburgh, pile run	6.50
Pittsburgh, screenings	5.50
Hocking, screened	6.00
Hocking, pile run	6.50
Hocking, screenings	7.50
West Virginia, splint screened	7.50
West Virginia, pile run	7.50
West Virginia, screenings	5.50
Kentucky, screened	7.77
Kentucky, pile run	7.55
Kentucky, screenings	5.75
Pocahontas, mine run	7.75
Pocahontas, screened	11.00
Pocahontas, screenings	6.75
Smithing	7.75
Kanawha Gas	sold up

Bunker Coal for Steamers and Tugs

Pittsburgh, lump	6.25
Pittsburgh, pile run	6.00
Youghiogheny, lump	6.50
Youghiogheny, pile run	6.25

Coke

CONNELLSVILLE

Divergent practices as to billing contract coke within Government limits. Production rate steady, limited by car supplies.

The matter of billing coke at the Government price limit when the shipment is made against a contract calling for a higher price, referred to in last report, has become a very live matter in the coke trade. A number of coke producers made readjustments with their customers as soon as they became convinced that the regulations do not permit of billings at above the Government limits and have since billed at the limits when the contracts as written called for higher prices. Others, and probably the majority, have not followed this course, and are greatly perturbed, but apparently as much perturbed at the publication of the facts as at the existence of the facts.

An important circumstance is that consumers of coke have shown little disposition to raise the issue as to the invoice price of coke, and perhaps the coke producers involved had hastily reached the conclusion that the point would not be raised at any time. As coke is scarce, and to start a controversy might result in shipments being shut off, as no allocating is being done by the Government, the buyers may simply be biding their time, as claims for readjustment could probably be made just as well at some later time.

There is practically no free coke coming into the open market, at least at the Government limits. Occasionally an operator offers coke at a higher price, in disregard of the regulations. For several weeks it has been the belief in some quarters that much business of that description has been done, although somewhat quietly.

Production is limited by car supplies to approximately the average obtaining in November and December, while the demand is much greater, and that is true despite the fact that the byproduct ovens are producing more and more freely, though few have thus far attained anything like capacity operation.

The market remains quotable at Government limits, $6 for furnace, $7 for foundry and $7.30 for crushed, over 4-in., per net ton at ovens.

The *Courier* reports production in the Connellsville and Lower Connellsville region in the week ended Jan. 24 at 239,606 tons, a decrease of 1,884 tons.

BUFFALO

The situation is not much changed, the demand from the furnaces being rather moderate. The fact is that it seems to be hard to get back to normal production. Reports from the local district complain that the ore moves out slowly. The car situation may be to blame for some of this, but there are also others which tend to hold up the production of the local furnaces. It appears that the furnaces are doing pretty well now. One company reports this week that it is now running strong, as though it had not been till now. Incidentally this furnace is still using beehive coke, but the management expresses the hope that the byproduct plants will soon make an end of the wasteful methods of the system. Local coke prices continue at $9.60 for 72-hour Connellsville foundry, $8.80 for 48-hour furnace, and $7 for off grades, with domestic sizes $8 per net ton, f.o.b. Buffalo.